

# Master your NIKON D-SLR camera

Become an instant expert with this complete  
step-by-step photography course



- ✓ Learn how to use your Nikon digital SLR
- ✓ All the main camera controls explained
- ✓ Take great shots with tips from the pros

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Three easy ways to read this digital edition...



# Master your NIKON D-SLR camera



If you've recently bought a new Nikon digital SLR, you're probably itching to get out and about to see what your new camera is capable of. But with so many seemingly complex controls and dials, where do you begin? Newcomers to SLR photography need look no further than right here, because this book contains all a beginner photographer needs to learn how to use an SLR.

Over 220 pages you'll discover all the vital camera techniques you need to master, from holding your D-SLR correctly to using the viewfinder and Live View, from shooting in fully automatic mode, progressing all the way to manual shooting, in which you take full control of all the camera settings. Once you've learnt the basics, the final chapter of the book will reveal how to put your new skills into practice, as we follow six professional photographers in one-to-one workshops with photography enthusiasts just like yourself!

We hope you enjoy learning with this guide. Because you bought this book we'd also like to offer you a 40% discount off our 40-part *Master your Nikon D-SLR camera* interactive DVD training course. To claim the discount, use the voucher code **MFMDVD** at [www.myfavouritemagazines.co.uk/photo](http://www.myfavouritemagazines.co.uk/photo)

Chris George, Series Editor





# Master your NIKON D-SLR camera

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# Master your NIKON D-SLR camera

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# Master your NIKON D-SLR camera

## SET UP YOUR NEW SLR







# Set up your new SLR

Set up your Nikon digital SLR camera, and discover how to use all the main dials, buttons, and menus

## 08 Get your camera ready to shoot

You've just got your new Nikon digital SLR camera out of the box – here's what to do next...

## 10 An overview of your camera's controls

Understand what each of your new digital SLR's dials, buttons and settings are used for

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There are many buttons and dials on every Nikon, but there are three main controls you need to master to access many of your SLR's functions and features

## 14 Discover how to navigate the settings menus

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## 16 Set the in-camera file options

Format your memory card, set the correct time and date, and define the image quality you want to use



# Get started with your Nikon

You've just got your new digital SLR out of the box – here's what to do next...

**B**efore we look at the settings and controls on your camera, there are a few essential items that you need to get your camera up and running. Most of these will probably be pretty familiar, such as the battery and memory card, but there are some little tricks and habits that it's worth getting to know before you start.



## Changing lenses

The ability to change the lens is one of the main reasons for having an SLR, but the process of taking the lens off the camera and refitting it can be a little fiddly if you aren't used to the process. Like when inserting and removing the memory card, it's a good idea to make sure that the camera is switched off before taking the lens or body cap off the camera. This will help to minimise dust and dirt reaching the sensor, and to avoid firing the camera or activating any of the switches during the process.

With the camera switched off, to release the lens or body cap you need to press and hold the large button on the side of the body next to the lens mount. Then you twist the lens gently but firmly until it's free to come off the camera. Fitting the lens is almost the reverse of removing it, but you have to line up the dot on the lens and the dot next to the lens mount on the camera. Then twist the lens until you feel it click into position.



## Batteries

The lithium-ion rechargeable batteries used in every current Nikon SLR don't need to be discharged fully before charging them, but like older rechargeable batteries, it's still not a good idea to recharge them when they are near a full charge. To charge the battery you'll need to clip the battery into the charger, and then plug the charger into a mains socket. Normally, the indicator lamp on the charger will blink during the charging process, and then light constantly when the battery is fully charged.

Once your battery is fully charged you can open the battery compartment on your camera, and then after making sure that the battery matches the orientation indicated by the diagram inside the compartment, carefully push the battery into the camera and close the door.





### Inserting the memory card

There are a couple of things to watch out for when inserting or removing a memory card. The first is to try to get into the habit of checking the memory card access light on the back of the camera isn't illuminated when you open the card door. To help avoid this it's also good practice to turn the camera off before you open the card door. This helps to avoid damaging the memory card by removing it while the camera is trying to access the card. The second is to check the orientation of the card before you put it into the camera. There will be a small diagram inside the card cover or next to the card slot to help with this.

### Memory card types and speed

Secure Digital cards are used in almost every current Nikon SLR. These come in different capacities and have different speed ratings, depending on your needs and budget. When it comes to capacity, it's a relatively simple choice – the larger the card, the more images you can fit onto it. They look similar, but SD cards come in a huge range of speed ratings, which indicates how fast data can be written to, or read from, the card. This may be quoted by a maximum data transfer rate such as 30MB/s (megabytes per second), or using a class rating, which measures the minimum speed of the card. So, when looking at cards it's best to check the class rating because it's more consistent across all cameras and devices.

For taking individual images with your camera, this won't make much difference. Using a slower card will mean that images take a little longer to write to the card than using a faster card, but this doesn't make much difference to your photos. Where it will make a big difference is if you're shooting lots of high-resolution images in quick succession, or shooting video. To avoid any problems you should use cards that have a speed rating of Class 6 or higher.



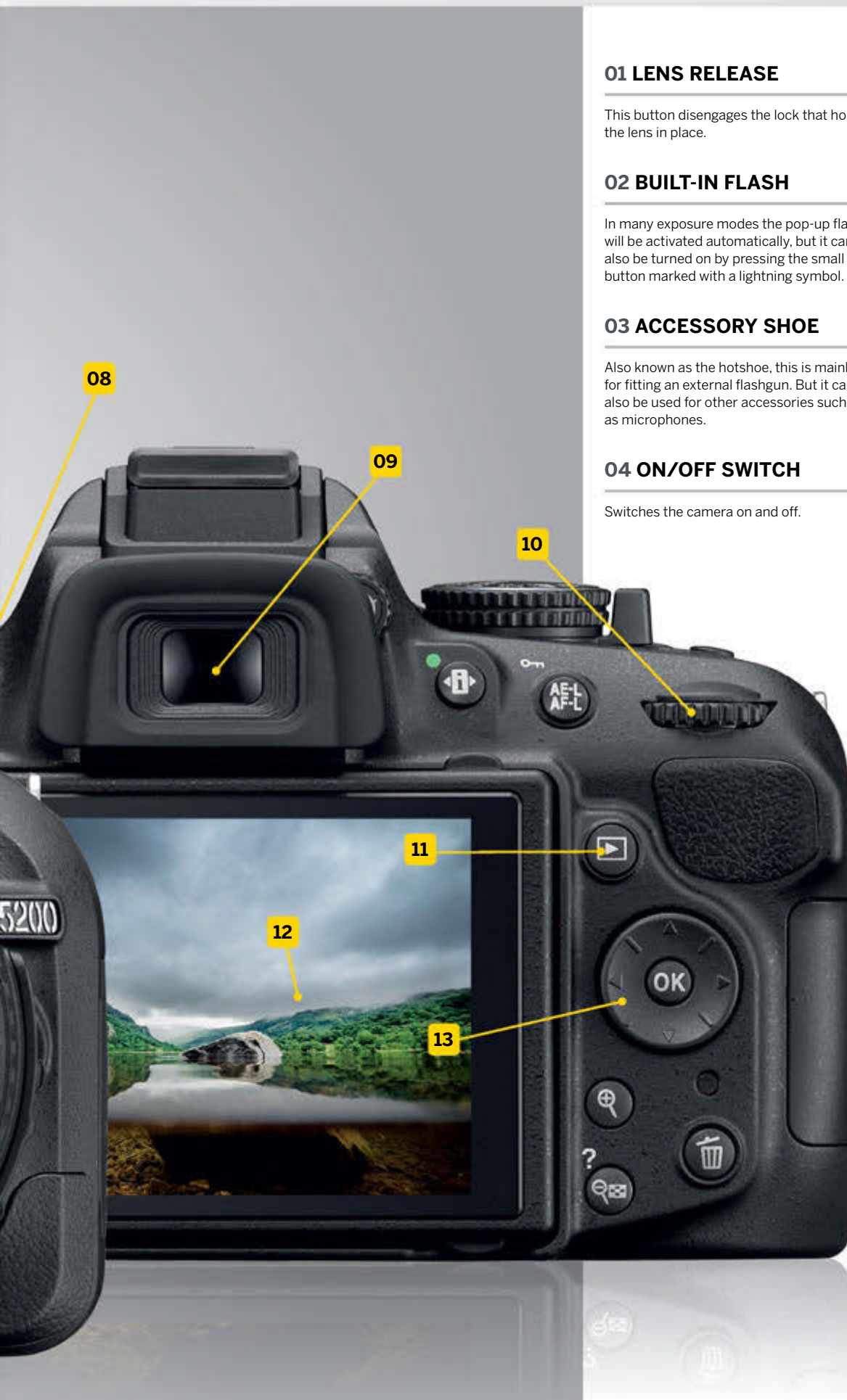


# Camera body overview

Find your way around all of the main dials, buttons and other controls on your camera







### 01 LENS RELEASE

This button disengages the lock that holds the lens in place.

### 02 BUILT-IN FLASH

In many exposure modes the pop-up flash will be activated automatically, but it can also be turned on by pressing the small button marked with a lightning symbol.

### 03 ACCESSORY SHOE

Also known as the hotshoe, this is mainly for fitting an external flashgun. But it can also be used for other accessories such as microphones.

### 04 ON/OFF SWITCH

Switches the camera on and off.

### 05 SHUTTER RELEASE

Inside the on/off switch you'll find the shutter release button, which you use to take your shot.

### 06 MODE DIAL

Used for selecting between the different exposure modes available on your camera. Some models have a locking button, which you need to press down to allow you to switch between the different modes.

### 07 LENS

This is your camera's eye on the world. The ability to change lenses is one of the things that makes an SLR so versatile. Most Nikon SLRs come supplied with a standard zoom lens, which is a good all-round lens when you're starting out.

### 08 MENU BUTTON

This is used to access all the menu options on the screen.

### 09 VIEWFINDER

The optical viewfinder lies at the heart of an SLR. It allows you to accurately frame your shot, along with displaying many of the most important settings both on the screen and in a separate information display.

### 10 COMMAND DIAL

This is the main control for changing settings on the camera when you're taking pictures. To access many of these you'll need to press and hold one of the buttons when turning the dial.

### 11 REVIEW BUTTON

Press this to display images on the screen.

### 12 LCD SCREEN

On most Nikon SLRs this screen gives you all the shooting and set-up information for your camera, and also allows you to play back images you've taken.

### 13 MULTI-CONTROLLER

This four-way control pad is mostly used to navigate through the settings and menus on the LCD screen.

# Master the main camera controls

There are many buttons and dials on every Nikon, but there are three main controls you need to master to access many of your SLR's functions and features



## THE MODE DIAL

Most Nikon SLRs have a large dial on top of the camera to choose between the different exposure modes. This is very easy to use, because all you need to do is turn the dial so that the mode that you want to use is aligned with the white marker next to the dial. The only thing to be aware of with this type of dial is that it's easy to change modes accidentally, such as when you're taking the camera in or out of your camera bag, by simply knocking the dial. To help avoid this problem, some models, such as the D7100, have a locking button on top of the dial, which needs to be pushed in to move the dial.

## CHANGING MODES ON PROFESSIONAL MODELS

On professional Nikon models you change the exposure mode by pressing the Mode button and using the command dial. This can be a little slower than a dedicated dial, and it's not as easy to see which modes are available, but unlike a dial it's almost impossible to change the mode accidentally.







### THE COMMAND DIAL

When you're in a shooting mode, this is your main way of controlling the settings used by the camera, such as the aperture and shutter speed. It's also used to control settings in conjunction with the other buttons.



### THE EXTRA COMMAND DIAL

One of the extra features that appear on more expensive models is a second command dial on the front of the hand grip. This extra dial is particularly useful when using manual exposure mode, because it means that there are separate dials for changing the shutter speed and the aperture, rather than just a single dial.



### THE MULTI-CONTROLLER

This four-way control pad has several different uses depending on whether you're in shooting or playback mode, along with being the main control for navigating through the menu systems of your camera. In playback mode you can scroll through images by using the left and right sections of the pad, and choose from different display options using the upper and lower sections. When you're shooting, the multi-controller is mainly used for moving the focus point. ■



# Navigate the menus

Find what you're looking for fast using your digital SLR's built-in menu system

**T**here are buttons on your camera to access many of the most common controls, and many models have direct access to more settings using the rear information screen, but you'll need to learn how to navigate through the menus to access all of the settings and adjustments available on your Nikon. So before you start shooting it's well worth familiarising yourself with how to access the main settings within the menu of your camera.

It can take some time to become familiar enough with these menus to be able to find individual items quickly, so you'll need to take some time to find out where the most useful settings are on your camera. You'll find that you won't need to access many of the menu options very often, so don't try to memorise every screen and menu.

## Basic navigation

To access the menus all you do is press the Menu button on the back of the camera. This will bring up whichever menu screen was last used, so you may need to press the left part of the multi-controller to highlight one



of the icons on the left of the screen, which indicate the different sections of the menu.

You then use the upper and lower parts of the multi-controller to scroll through these different sections, depending on which settings or features you want to access. Many of these menus contain many more settings than can be shown on a single page, so you may have to keep scrolling down to show all

of the options available. To enter the section that you want to access you can press either the OK button or the right part of the multi-controller, and use the upper or lower parts again to scroll through the different settings within this section. Then, once you've selected the options you want, it's best to press OK to confirm these settings before starting to shoot.

## 1 Playback

In this menu you can choose how the camera displays images, such as rotated or as part of a slide show.





## 2 Shooting

Here you'll find many of the shooting features of your camera, such as the image quality and size, the white balance and many other options.

## 3 Custom setting

The Custom Setting menu is split into several different pages such as Autofocus, Exposure and Controls. There are options on each page for customising different settings.



## 4 Setup

This menu is mostly used to choose many settings when you start using the camera, although there are some options such as sensor cleaning that you may need to access later on.



## 5 Recent Settings

The Recent Settings menu is a list of the most recently accessed options. It's handy if you can't remember which individual menu the settings that you've just used are located in. Some models also have a customisable My Menu, where you can store the most useful menu items.



# Set the camera file options

Format your memory card, set the correct time and date, and define the image quality you want to use

**W**hether you've just got a new camera, or you've had your camera for some time, you're probably itching to get out and shoot. But even though it may not seem important right now, it pays to go through a few things to set up your camera so you're using the right basic settings, making it easier in the future to find images that you've shot. So the first thing to check is the date/time settings on the camera, and also make sure that you're using the best file format for your shots. You also need to get into the habit of using the right methods to delete images from your card.

## Date/time

Before you start shooting it pays to make sure that you've set the correct date and time on the camera. This may not seem important right now, but it can really help you find, sort and keep track of images once you've downloaded them to your computer.

You'll find this setting in the Setup menu, and you need to choose the time zone that corresponds to your location. Then choose the style of the date/time display, and whether daylight saving time is on or off, depending on the time of year. Finally, you need to set the current date and time using the



left/right areas of the multi-controller to select different items, and the up/down areas to change the values. To set this you need to press the OK button, which will also exit the menu.

## Memory card formatting

The next setting is really important, because it's a method for deleting

all the images and data from your memory card. Unlike simply deleting images, which potentially leaves some data on the card, formatting wipes the card clean. This is great for maximising the space on the card, and also for keeping your cards in good condition, but it needs to be used carefully to avoid losing images.

So it's a good idea to get into a routine to make sure that you don't format a card that you haven't downloaded the images from, to prevent this problem. Rather than waiting until you want to start shooting to format the card, it's a great idea to do it immediately after you've downloaded the images to your computer. This way you won't get in a situation where you put a card in your camera, and can't remember whether you've downloaded the images.

## File format

Excluding video shooting, there are two main file formats that you can use on your Nikon. These are JPEG and raw (also called NEF). This choice of file formats can be confusing, but it mainly comes down to what you want to do with your images, and whether you're happy spending time processing your photos in computer software such as Photoshop Elements.







## JPEG

This format is a 'universal' image file format, which enables you to look at your images quickly and easily on any computer. When you shoot a JPEG image, the camera applies all the processing, such as sharpening, saturation and contrast to the final image, so it's ready to use straight out of the camera.

This makes JPEG the ideal format to start learning how the different settings can affect your images. It also makes it easier to look at, print and share them quickly. Like so many things in life, there's a pay off for this convenience, though, because raw

images can produce slightly better quality than JPEG images straight from the camera.

## Image size and compression

In JPEG mode you have the option of changing the size of the image recorded, along with the compression. The image size is simply the number of pixels that make up the image, and you normally have the option of large, medium and small. The smaller image sizes will produce smaller file sizes, so they can be useful for fitting more images on your memory card. In most cases you can leave this on the large

## TOP TIP

If you've just started shooting, or you're experimenting with new techniques and settings, set the camera to the largest JPEG option. This will give a good compromise between file size and quality.

setting, unless you're sure that you will only ever want to produce a small print or look at the images on-screen.

There are also compression settings available in JPEG mode, called fine, normal and basic. These settings produce different file sizes, with fine giving the largest files, then normal, and finally basic giving much smaller files. These settings are a little more difficult to understand than the size, because they don't change the number of pixels, but instead use a computer program to reduce the file size of the image stored on the card.

This reduced file size has an effect on the quality of the image, though. The more compression applied, the more likely you'll be able to see some degradation of the tones and detail in the image.

## RAW (NEF)

This file format can only be 'read' by raw-processing software, such as the ViewNX software supplied with every Nikon camera, or software such as Photoshop or Elements. In this software you have the opportunity to change almost every adjustment that you would normally set in the camera.

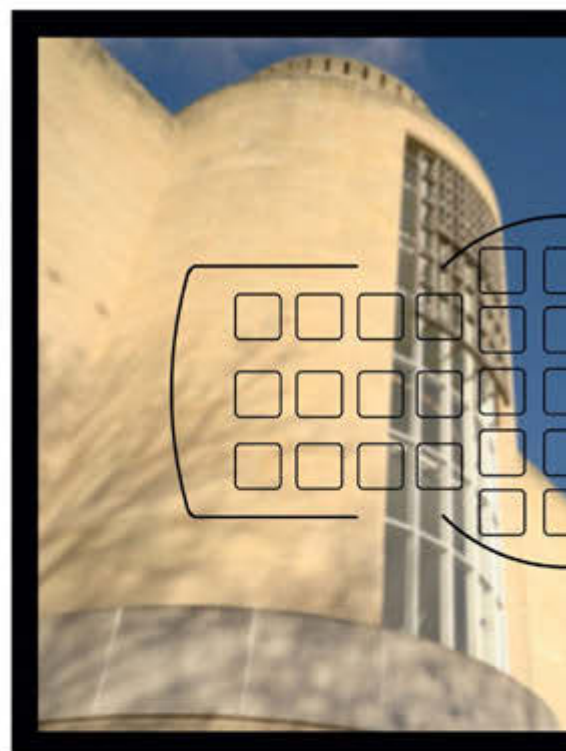
The main reason for choosing the raw format is that with the right processing they can produce slightly higher quality images than JPEGs from the camera. But shooting in the raw format makes it more time consuming to share, print or look at your images, because you need to convert them to a universal format, such as JPEG. ■





# Master your NIKON D-SLR camera

## LEARN ESSENTIAL SLR TECHNIQUES







# Learn essential SLR techniques

Vital camera techniques you need to learn, from holding your D-SLR correctly to using the viewfinder and Live View

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Discover the right way to hold your camera. Not only will you look the part next to fellow photographers, but more importantly you'll get sharper shots

## 24 Introducing the viewfinder and Live View mode

Most Nikon SLRs offer two ways to frame your shots. Here are the pros and cons of both options

## 26 How to read the viewfinder

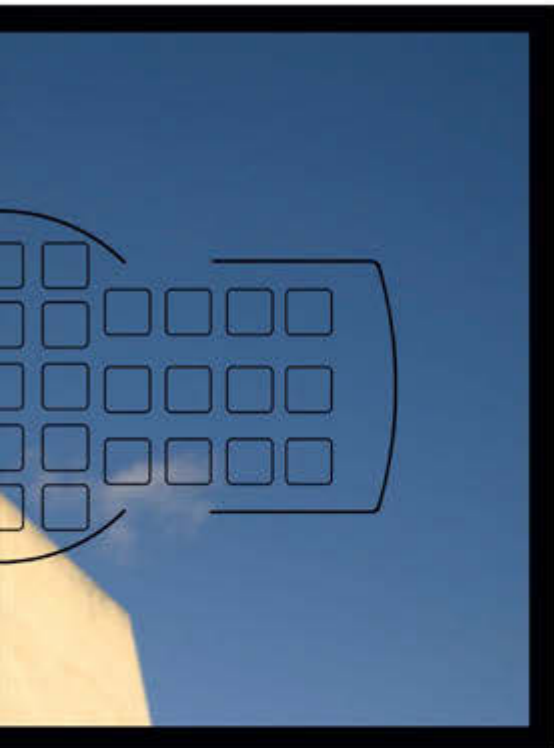
Make sense of all the numbers and pictograms you see around the viewfinder image

## 28 The information on the rear LCD

Find out how to use the rear LCD to reveal all the important settings and information

## 30 Take your first picture and save it to your computer

Discover how to use the shutter release button and how to transfer photos to your computer





# How to hold your camera

Discover the right way to hold your camera. You'll look the part next to fellow photographers, and you'll get sharper shots

**I**t may not seem that important, but how you hold your camera, how you position your body, and even how you stand can all have an effect on the sharpness of your images, and also whether you can access all of the camera controls easily. So it pays to check that you're getting the basics right. Otherwise you could end up having to break bad habits, which is often much more difficult.

There are some 'rules' for the best way to hold your camera, but everyone is slightly different, so use this as a guide, and if it doesn't feel comfortable, try slightly varying the position of your hands, arms or feet, until you find the most comfortable position. ▶







### 01 HANDS

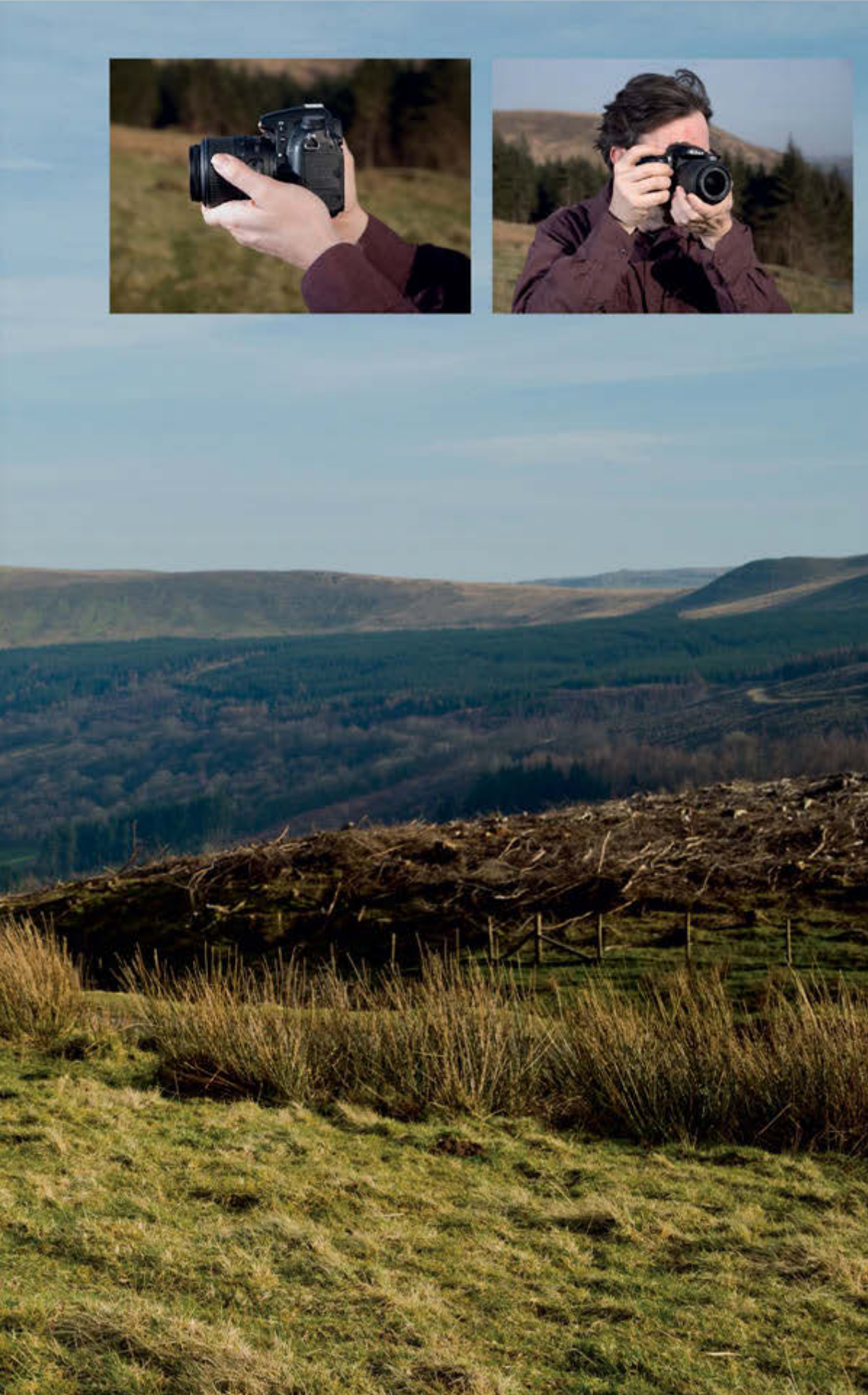
The bottom three fingers of your right hand should be positioned on the hand grip of the camera. You need to have a reasonably solid grip, but don't grip it too tightly, because this can become uncomfortable quite quickly and also cause camera shake. You should also make sure that you can easily reach the main controls on the camera with your index finger and thumb, without having to shift your grip on the camera. Then position your left hand underneath the body of the camera and lens. This hand should take most of the weight of the camera, and also allow you to operate the zoom control without having to move your hand.

### 02 ARMS

The main thing to watch with your arms is to try to keep them reasonably close to your body, rather than out to the sides. This is quite easy with the camera in the horizontal orientation, but you should also try it with the camera in the upright position as well. This often takes a little more getting used to, so try practicing this.

### 03 FEET

Try to make sure that your feet are about a shoulders' width apart. You may find it more comfortable and steadier to have one foot slightly in front of the other, rather than completely parallel.





### Other things to try

Use these shooting techniques to reduce camera shake

Don't be tempted to take a deep breath before you fire the shutter, or hold your breath, because both of these can create tension in your muscles. Simply breath normally, and for the best results try to fire the shutter just after you've exhaled. But most of all try to stay relaxed, and squeeze the shutter smoothly, rather than stabbing at it harshly.



### What is camera shake?

How can you tell if an image is blurred due to shake, or due to other reasons?

Camera shake occurs when the camera moves during the time that you're taking a shot. It will make the image look blurred, and in severe cases you'll notice a 'streaky' appearance in the image. It can be difficult to spot the difference between camera shake and other

causes of blur such as poor focusing or subject movement. But generally if the whole image is blurred by a similar amount, then it's due to camera shake, while there will normally be some sharp areas in the image if it's due to focusing errors or subject movement.

### Four methods you can use to reduce camera shake

#### 1 Kneeling

As well as giving you a slightly lower viewpoint, kneeling down to take a shot can also help you to combat camera shake. When you're in position, you can rest your left elbow on your knee to help stabilise the camera, which is particularly useful when using longer focal length lenses.





## 2 Lying down

The extremely low angle created by lying on the floor won't suit every type of image, but if it does, this position gives a really stable platform. It can allow you to shoot at much slower shutter speeds than normal, while still avoiding camera shake.



## 3 Bracing the camera

If you need to use a slow shutter speed without a tripod, and you can't kneel or lie down, look for an object around you to brace the camera against. In an urban environment you'll find lamp posts, walls or other street furniture, while in the country there are often trees, rocks or fences to use.



## 4 Using a tripod

Even though there are other ways to get sharp shots at slow shutter speeds, a tripod is still the best and most reliable way of ensuring sharp pictures.



# Viewfinder and Live View mode

Most Nikon SLRs offer two ways to frame your shots. Here are the pros and cons of both options

**A**ll of the current Nikon digital SLRs offer two ways of framing your images: via the traditional optical viewfinder or using Live View on the rear screen. Both have advantages and disadvantages, depending on what and where you're shooting. We'll look at both in more detail over the coming pages, but first let's find out what they both do, and when to use them.

## The viewfinder

The optical viewfinder lies at the heart of the design and layout of an SLR camera. This viewfinder enables you to see through the lens you're going to use to take your photo. The light coming through the lens is reflected up into the viewfinder using a mirror, which you can see when you take the lens off your camera. Normally, the image that you see in the viewfinder is shown with the lens at its maximum aperture, which means that it may not exactly match the appearance of your final shot. On many SLRs the viewfinder doesn't quite show you the whole of the frame, because there's an area around the edge of the image that isn't visible in the viewfinder. But because of the design and shape of an SLR, using the viewfinder with the camera held up to your eye is often a more stable way of holding the camera than holding the camera to see the Live View screen.



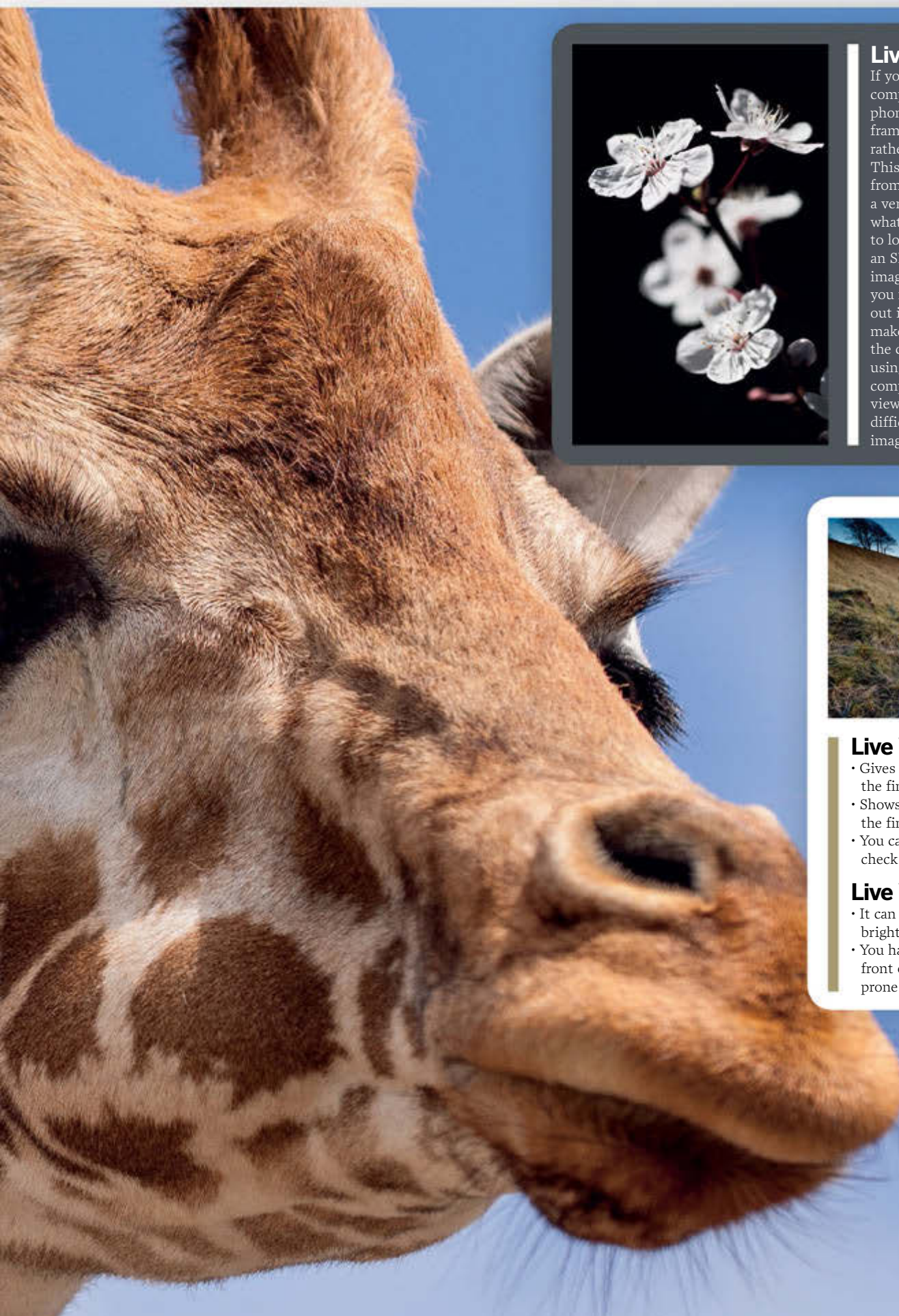
## Viewfinder Pros

- It can be easier to hold the camera steady using the viewfinder
- The autofocus is generally quicker and more responsive than when using Live View
- It's easier to see in bright light than the rear screen

## Viewfinder Cons

- It can be difficult to tell whether the subject is sharply focused
- The image you see in the viewfinder is normally at the maximum aperture, so it may not match the image you get when you take the shot





### Live View

If you're used to using a digital compact camera or a camera phone, you'll be familiar with framing your images on a screen rather than using a viewfinder. This image is a live image taken from the camera's sensor, so it's a very accurate representation of what your final image is going to look like. But the design of an SLR means that to see the image on the Live View screen, you need to hold the camera out in front of you. This can make it more difficult to hold the camera steady without using some sort of support, compared with using the optical viewfinder. It can also be more difficult to see the Live View image in bright sunlight.



### Live View Pros

- Gives a very good preview of how the final image will look
- Shows exactly the same area as the final image
- You can zoom into the image to check the focusing

### Live View Cons

- It can be difficult to see in very bright conditions
- You have to hold the camera in front of you, which can be more prone to camera shake. ■



# How to read the viewfinder

Make sense of all the numbers and pictograms around the image

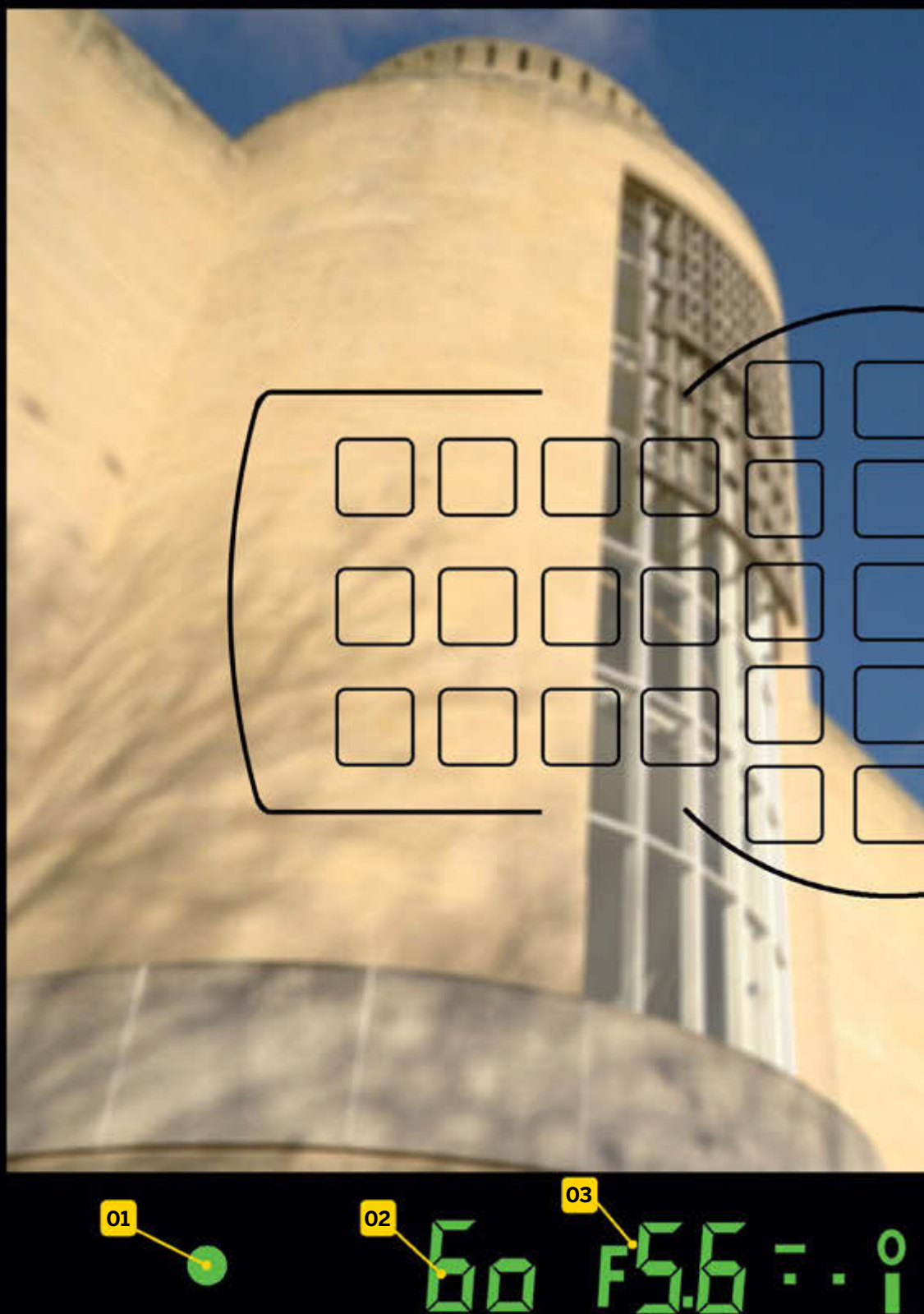
**T**he viewfinder gives you much more information than simply showing you what the camera is pointing at. On top of the image there's a display to indicate the area that the camera is going to focus on, and there's also a display along the bottom of the screen that gives you loads of information about the settings on the camera.

All of this information can be confusing, so here's what the displays mean so that you can get to grips with this essential part of using your Nikon SLR.

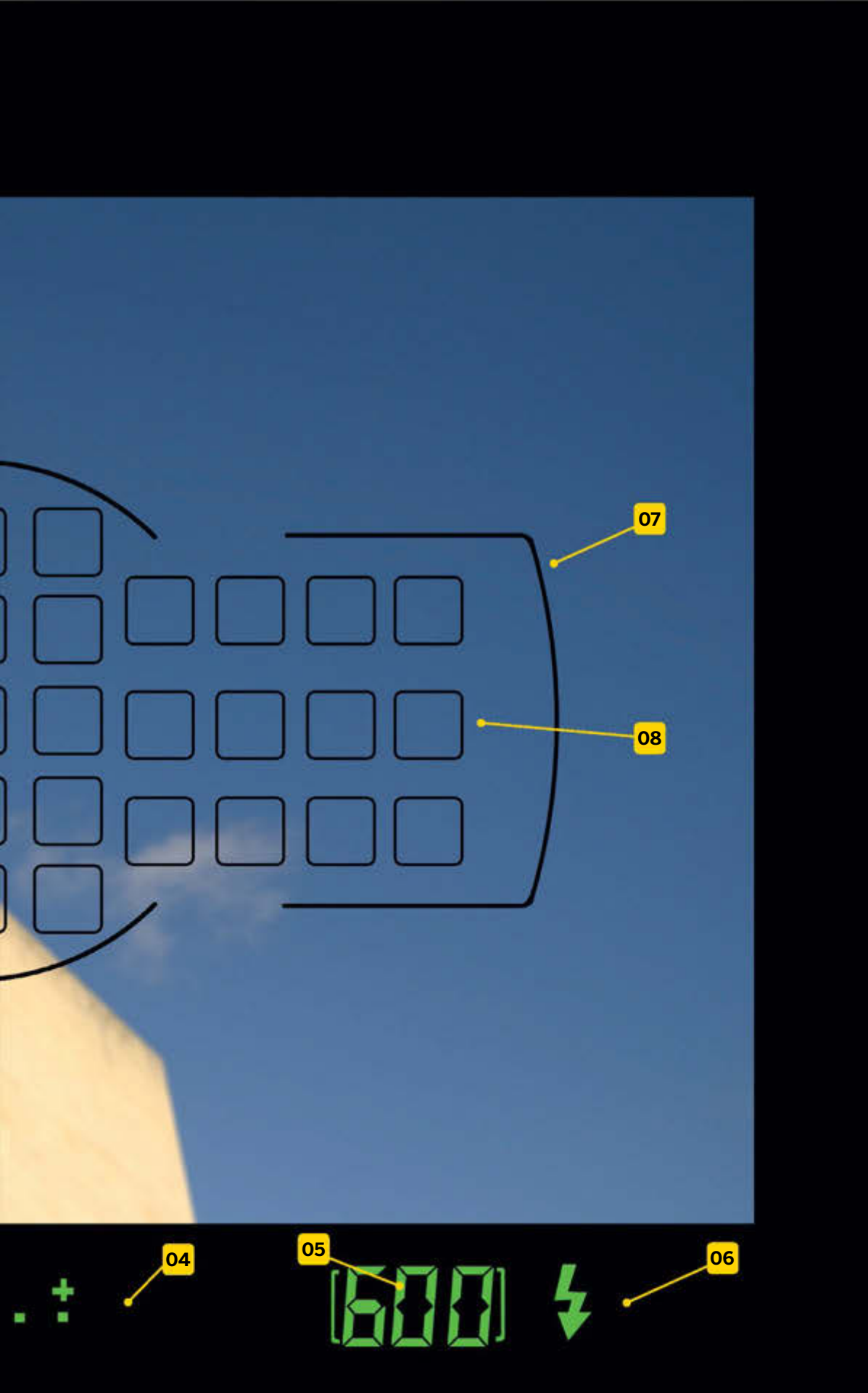
## Dioptre adjustment

Just to the side of the viewfinder you'll find a small knurled dial, which is used to adjust the focus of the viewfinder (not the focus on the lens itself). This dial needs to be adjusted so that you can clearly see the display at the bottom of the viewfinder, and the brackets on the viewfinder screen, so that you can use the viewfinder properly.

Normally, this adjustment will only need to be done once, when you first use the camera, unless you find that the viewfinder display is no longer clear.







### 01 FOCUS CONFIRMATION LIGHT

Lights up when focus is achieved.

### 02 SHUTTER SPEED

The currently selected shutter speed.

### 03 APERTURE

The currently selected aperture.

### 04 EXPOSURE METER/COMPENSATION

Shows whether exposure compensation has been applied.

### 05 FRAME COUNTER

The number of shots remaining on the memory card.

### 06 FLASH READY LIGHT

Lights up when the flash is ready to fire.

### 07 FOCUS POINT AREA

Indicates the overall area covered by the camera's focus points available when using the viewfinder.

### 08 FOCUS POINTS

In the default automatic focus area mode, this area will normally be blank until you press the shutter release. Then the focus point or points that the camera uses will light up on the screen. In single-area mode the individual focus point will be visible on the screen (normally as a dark round-cornered square). This will light up when the shutter is pressed, and the camera has focused.

# The rear LCD

Find out how to use the rear LCD to reveal all the important settings and information

**A**s well as enabling you to access the menus and Live View options, the rear screen also gives you all of the shooting and setting information on most Nikon SLRs. This information screen will come on automatically on many models when you switch the camera on. But the screen will go off when you half-press the shutter, take a picture, or after a preset time, in which case you have to press the I or Info button to activate the information screen. On models with a small LCD on the top of the camera, such as the D7000 and above, you have to press the Info button on the back of the camera to turn the information screen on.

The large top part of the screen shows you all of the main shooting settings, such as the exposure mode, shutter speed and aperture. This display will change when you use the command dial to change settings, but it doesn't give you access to many of them.

The majority of the settings are shown in two rows along the bottom of the screen. To access these settings with the information screen active, you need to press the I or Info button. This will change the display so that these icons along the bottom of the screen are active, and you can navigate through these using the multi-controller on the back of the camera. Once you've highlighted the setting that you want to change, all you need to do is press the OK button, and then change the settings on the screen that are then displayed.

This sequence will work in any exposure mode, but you'll find that not every setting is available, depending on the exposure mode and other settings that are activated on the camera. In this situation you'll find the unavailable settings are greyed out, and when you use the multi-controller the highlighted icon will simply jump over these icons.

On many models, including the D3000- and D5000-series cameras, you have the option of using a graphic information display, along with the classic display. As the name implies, this shows images of the aperture, shutter speed and ISO dials, along with the numerical values.







### 01 SHUTTER SPEED

The currently selected shutter speed.

### 02 APERTURE

The currently selected aperture.

### 03 ISO

The currently selected ISO setting.

### 04 EXPOSURE MODE

The exposure mode selected on the mode dial.

### 05 BATTERY STATUS

An indication of the charge remaining.

### 06 FOCUS POINTS

The selected focus point or points.

### 07 SHOTS REMAINING ON CARD

The number of shots remaining on the memory card.

### 08 EXTRA SETTINGS

These become active when the I or Info button is pressed when the information screen is on.


# Take your first picture

Discover how to use the shutter release button and how to transfer photos to your computer

**O**nce you're comfortable handling your camera, along with using and changing the main controls and settings, the shutter release is one control that you need to be really comfortable and confident using. This seemingly simple control is easily overlooked, because on the face of it you just press it down to take a photo. But there's a little more to it than that, because it also activates the metering and autofocus systems on your camera.

This is done by lightly pressing the shutter release, until you just feel a little resistance, and then pressing it fully

down will take a shot. In many shooting situations the extra control isn't always obvious, or significant, because the camera will focus fast enough for you to be able to activate the camera and take a shot by simply pressing the shutter release. But in more difficult shooting situations, where the camera may struggle to focus properly or you need to lock the exposure, this extra control (known as half-pressing) is crucial to being able to get the best results.

So, it's worth practicing the basic technique of activating the shutter, even without taking any shots, until you're completely comfortable with the action and controls. 

## STEP BY STEP

### A simple way to practice using the shutter release



#### 1 Find a subject

First you need a scene with a subject close to you, and another much further away. Then switch the camera on, and point the camera so that the closer subject is right in the middle of the viewfinder.



#### 2 Half-press the shutter

Half-press the shutter release button, until the camera has focused on the subject (usually indicated by a beep, and also a green circle in the viewfinder display).



#### 3 Take the shot

Then re-frame the shot so that the frame only includes the distant subject, and again half-press the shutter release, so the camera re-focuses. Finally repeat step two, but this time after it has focused, press fully to take a shot.





# Master your NIKON D-SLR camera

LEARN ESSENTIAL SLR TECHNIQUES





# Transfer your photos to your computer

Copy your pictures to your PC for editing, storing or sharing using a USB cable or card reader

Once you've taken some shots, you'll want to download them to your computer to see them larger, organise them and edit them. It may not seem important at this stage, but it's a good idea to devise a system for naming folders and storing your images to make them easier to find later on. This could mean simply renaming the folder with the date that you shot the pictures, or using the subject or location. There are two main ways that you can download images to your

computer. Either attach the camera to your computer with the USB cable supplied, or take the card out of the camera and use a memory card reader. Your camera will come with all of the gear you need to connect it to your computer, but you'll need to make sure that the battery is charged before you begin. Using a card reader is often more convenient, but unless your computer has a built-in card reader, you'll have to buy a separate card reader to use this method. They only cost a few pounds, however.

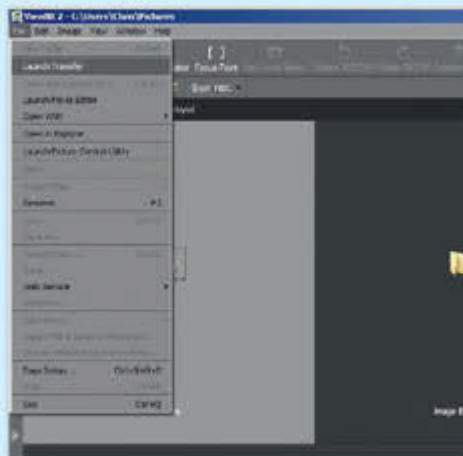
## STEP BY STEP

### Download your images using View NX



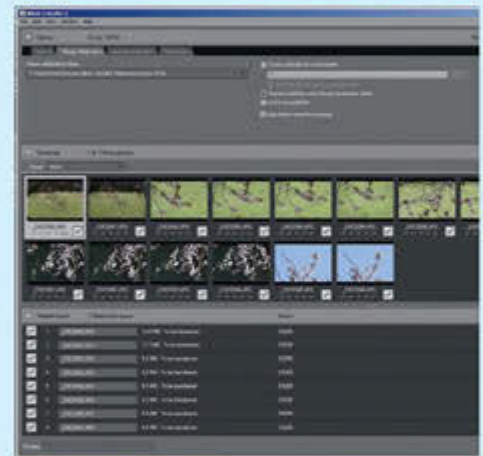
#### 1 Plug in your camera

Once you've installed the View NX software supplied with your Nikon, make sure that your camera is switched off, and then use the supplied USB lead to attach the camera to the computer. If you're using a card reader, simply attach the card reader, and then take the card from the camera and insert it into the reader.



#### 2 Switch on the camera

With the camera attached to the computer you can switch the camera on. Your computer should recognise that the camera is attached, and will open the Nikon Transfer software. You may get a prompt to choose this from a drop-down menu, in which case choose Nikon Transfer and click OK.



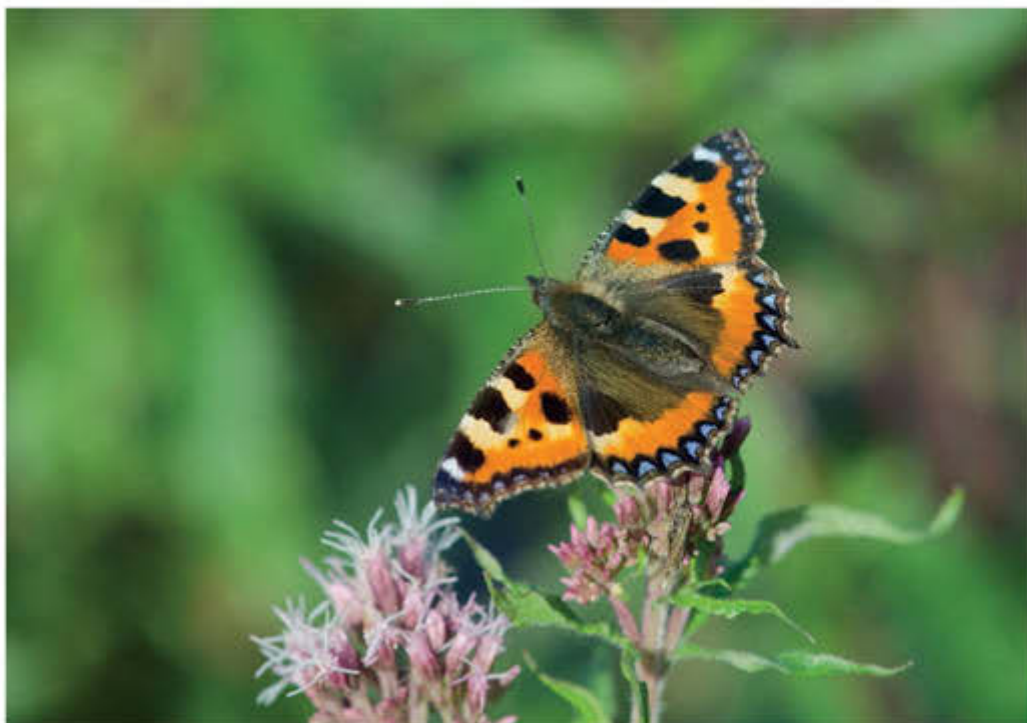
#### 3 Download the images

The software will give you the option to import all the images on the card, which is usually the most convenient way. Once the import has finished, turn the camera off and unplug the cable, or use the operating system to eject the card from the reader, and then place the card back into the camera.



# Master your NIKON D-SLR camera

## EXPOSURE MODES EXPLAINED







# Exposure modes explained

Discover how to choose the appropriate exposure mode for a given scene on your Nikon digital SLR camera

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Let your digital SLR take control of all the settings for you with the automatic and scene modes

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# Fully automatic and scene modes

Let your digital SLR take control of all the settings for you with the automatic and scene modes

## Fully automatic exposure mode

Indicated by a green Auto icon on the mode dial, this exposure mode is designed to make it as simple as possible to get correctly exposed results. The camera will set the shutter speed, aperture and ISO automatically according to the light measured by the camera's exposure meter. This makes it a great mode to start with, but you don't have any control over any of these three settings, so it isn't a good option once you get beyond the 'point-and-shoot' stage of your photography.







### Scene modes

These are similar to the fully automatic exposure mode, but the camera will choose settings for different creative effects and likely scenarios to suit different subjects and shooting situations. They give you a little more creativity than the fully auto mode, and on many cameras you can choose to set the ISO manually as well as automatically, which is usually unavailable in the fully auto mode. But they still won't give you full control over the shutter speed or aperture used, or allow you to override the exposure. So, again similar to the fully auto mode, they are a good choice if you aren't confident changing the settings yourself, but only offer a little creative control. There are many different scene modes available, and the exact settings used will vary a little between different models. But here are four of the most common scene modes, and how their settings will vary from using the fully auto mode.



### Portrait

This mode uses a wide aperture setting to isolate the subject by blurring objects behind (or in front) of the subject.

### Landscape

Uses a narrow aperture to try to keep as much of the scene sharp from near to far, and will also try to use a low ISO setting.



### Sports/action

Chooses the fastest shutter speed possible to minimise blur due to either subject movement or camera shake.



### Close-up

The camera will choose an aperture of around  $f/8$  or  $f/5.6$  to give a good compromise between keeping the subject sharp near to far and using a shutter speed fast enough to avoid camera shake. ▶



# Exposure basics

Want to wean yourself off fully automatic mode?  
Read our guide to the basics of exposure...

## Exposure

Exposure is one of the fundamentals of photography. It can initially seem difficult to grasp, but it's really pretty simple. At its most basic, it's just how dark or light your image is, and your camera has an exposure meter to measure the amount of light, and choose the settings automatically that will give a correctly exposed photo. Even though every Nikon SLR has the ability to work out the exposure completely automatically, understanding how the different settings affect the exposure will help you to get better and more creative results.

## What is exposure?

Exposure is controlled by three settings inside your camera: the shutter speed, the aperture and the ISO. These can be pretty difficult to understand, because it may not be immediately obvious how each one affects the exposure.

The easiest way to get to grips with this is to think of exposure as similar to filling a bucket by leaving it out in the rain. You don't have any control over how much rain there is (just like the light when

you're shooting, but you do have control over how long you leave the bucket out, how wide the bucket is and how much water you want. The shutter speed has the same effect as how long the bucket is left out. The aperture is like the diameter of the bucket, and the ISO is how much water you want to collect.

So, if you have a shallow bucket (which is like using a high ISO) and it's also wide (like using a wide aperture setting), then the bucket will fill-up quickly (so

you would need a short shutter speed). But in the same conditions, if you want to collect more water (use a lower ISO setting), you will need to either use a wider bucket (wider aperture) or leave it out longer (use a longer shutter speed).

You can change any one, two or three of these settings to alter the exposure. We'll take a look at each setting in a bit more detail to see how this affects the exposure, before we move on to how they can be used creatively.



## ISO

This setting controls how sensitive the camera is to light. A low setting, such as ISO100 or 200 is best used in bright conditions because it needs a lot of light to give the correct exposure. While a much higher setting such as ISO800 or 1600 needs much less light, so is ideal for dark conditions.



## Shutter speed

This controls how long the sensor is exposed to light. The actual length of time that the shutter will be open in most lighting conditions will be very short, such as 1/60 or 1/125 sec, or even shorter. But you can also use much longer shutter speeds in dark conditions as long as the camera is securely mounted on a tripod or other support.



### Aperture

This is an opening inside the lens, which governs how much light reaches the sensor. Small numbers such as f/2.8 or f/4 indicate a larger opening than large numbers such as f/11 or f/16. Think of the number as a fraction and it makes a lot more sense.



### What are stops?

This is one of those words that crops up when talking about exposure, but what does it actually mean? When applied to exposure in general, one stop means half or double the exposure, and it's often used as a short-hand way of talking about the exposure in general without referring to any one specific setting. So -1 stop is half the exposure, and will produce a darker image, while +1 stop is double the exposure, and will produce a lighter image.

But the term stop can also be applied to any of the three settings that you use to control exposure. So if we start with an

exposure of 1/30 sec at f/8, and ISO200, to achieve an exposure of +1 stop you could double the shutter speed to 1/15 sec, and keep the other two settings the same. Alternatively, you could change the aperture to f/5.6 or set the ISO to 400.

While starting with the same base exposure of 1/30 sec, f/8 and ISO200, to get an exposure of -1 stop you can halve the shutter speed to 1/60 sec, set the aperture to f/11 or reduce the ISO to 100.

Along with the basic +/- 1 stop, you can also alter the exposure in multiples, such as +2 or +3 stops, and also fractions of a stop such as 1/2 or 1/3 stop.

### The exposure triangle

Because there are three variables, the way they interact to create the exposure is often called the exposure triangle. This may sound technical, but once you have a basic understanding of how each setting affects the exposure, it will all become much simpler.

The main thing to remember about the exposure is that there are several combinations of the three settings that all give the same exposure. So, for example, with the camera set to ISO200, a setting of 1/250 sec at f/5.6 will give the same exposure as 1/125 sec at f/8, 1/60 sec at f/11 and 1/30 sec at f/16. But you can also change the ISO setting, which would affect one or both of the other two settings to give the same exposure. So, using the same exposure as in the example above, changing the ISO to 400 would mean that you would then have to set 1/500 sec at f/5.6 or 1/250 sec at f/8 to give the same exposure. So, remember that there isn't just one combination of settings to get the right exposure, and if you change one setting, in the auto exposure modes the camera will change the other settings to get the correct exposure. ■



# Program mode

Learn about the exposure controls by using program mode, and discover how ISO affects your images

**I**f you don't like the idea of changing too many settings, or if you're a bit scared of getting it wrong, program mode is the perfect way to start getting to grips with the exposure settings.

In this mode the camera will select the shutter speed and aperture automatically, and you can choose between automatic or manual ISO settings. So far it sounds a little like the fully auto mode, but using program mode also gives you access to the basic controls that will start to give you greater control over the exposure, along with many of the other camera controls that are not available in the full auto mode.

Normally, in program mode, the camera will try to select a combination of settings that will work in the greatest number of shooting situations. So, in normal lighting conditions it will choose a shutter speed fast enough to avoid camera shake, an aperture that will keep as much of the scene sharp, and a low ISO to keep noise low. In darker conditions it will use a slower shutter speed, a wider aperture and a higher ISO, if the ISO is set to automatic. These values are determined by a computer program inside the camera, hence the name of the mode, but they are usually the safest options possible to provide a well-exposed, sharp, clean photo. ■



## ISO

As well as simply affecting the exposure, different ISO settings also have an effect on the quality of the images that you'll get. The general rule when choosing the ISO is that lower ISO settings give better quality results than higher values. This manifests itself as noise, lower colour saturation and a reduction in the sharpness in images shot at high ISO settings.

One of the biggest improvements in digital SLRs over the last few years is the image quality at high ISO settings such as 800 or 1600. This means that you can shoot in a wider range of lighting conditions, without a tripod, and still get high-quality images.

You can easily choose the appropriate ISO setting manually, but in program mode (along with the other more advanced shooting modes) many models also give you the option of limiting the range of ISO settings available when using the automatic ISO setting. You'll find this in the shooting menu of the camera, and you can choose a maximum ISO setting from the list. For most situations I would suggest setting this to ISO 800, to get the best quality, but in low light you may want to set a higher value.









# Program shift

Take creative control of program mode using the shift feature to refine the exposure settings

**P**rogram mode can be used as a fully automatic mode, but it has a trick that makes it a great way to start experimenting with the settings without having to explore the more complicated modes. Nikon calls this flexible program, but it's also known as program shift. It's not a separate mode on the dial, because you access it with the mode dial set to P. You simply turn the main command dial to shift the combination of shutter speed and aperture that the camera uses.

So, for example, if the camera has chosen an exposure of 1/250 sec at f/8 in normal program mode, you can alter this to use a faster shutter speed and wider aperture such as 1/1000 sec at f/4. By turning the dial in the opposite direction you can choose a narrower aperture and slower shutter speed such as 1/60 sec at f/16.

This gives you basic control over the creative effects of using different apertures and shutter speeds, but unlike the semi-automatic modes, the camera won't allow you to select values that are unsuitable for the lighting conditions. This makes it perfect for experimenting with these settings without the worry of getting the settings completely incorrect. Flexible program mode does have one main limitation compared with the shutter- and aperture-priority modes, though. In these modes you can set a specific shutter speed or aperture, and the camera won't alter it, but in flexible program mode, if the lighting changes, then the camera can alter both or either of these settings to get the correct exposure. So it's not as easy to get specific effects in flexible program mode as it is in these other modes.





### Exposure compensation

Modern exposure metering systems are very accurate, but there are situations and subjects that can cause the exposure to be too dark or too light. This is where the ability to adjust the exposure in program mode by using a feature called exposure compensation is much more versatile than the fully automatic or scene modes. See the steps below...

#### STEP BY STEP

## Using exposure compensation



### 1 Take a shot

With the camera in program exposure mode, frame your image and take a shot. Then press the playback button and check the image.



### 2 Image is too dark

If your first image is too dark, press the +/- button and turn the command dial until the exposure indicator shows +1, then take another shot.



### 3 Image is too light

If the first image is too light, again press the +/- button, but this time turn the command dial the opposite way until -1 is displayed. Take another shot.

F/2.8

F/22



# Aperture priority mode

Take full control of the aperture setting on your Nikon by mastering aperture priority mode

**E**ven though you can get some control over the aperture that the camera will use in program exposure mode, you'll need to switch to aperture-priority mode to get complete control. In this mode you can select any of the apertures available on your lens, and then the camera will automatically select the shutter speed. This semi-automatic exposure mode is a great way to learn more about how the

aperture selected will affect your images, but with the benefit of not having to worry too much about the other settings.

There are a couple of reasons for selecting different apertures. The first is how bright or dark the lighting conditions are that you're shooting in, and the second is how much of the scene you want to be sharp in front of and behind the subject. ✨







### Exposure compensation

Just like when using program mode, you can use the exposure compensation facility in aperture-priority mode. But instead of affecting both shutter speed and aperture, in this mode the camera will only change the shutter speed. This means that the aperture that you originally set will stay the same, unless you change it using the command dial.

Along with the aperture that you use, there are two other factors that affect the depth of field in your images: the focal length of the lens and the distance between you and the subject.

### Focal length

The shorter the focal length, the greater the depth of field will be. So, if you want to keep the whole scene sharp, use a short focal length (wide-angle) lens, or to get shallow depth of field effects, use a long focal length (telephoto) lens.

### Subject distance

The closer you are to the subject (the dandelions in this image), the less depth of field there will be, and the further away you are, the more depth of field there will be.

F/4



F/11



## STEP BY STEP

### Using aperture priority mode



#### 1 Set the mode dial to A

To access aperture priority you start by moving the exposure mode dial to the A position. You can then select the aperture using the main command dial on most cameras. If your camera has two command dials, the aperture is normally set using the dial on the front of the camera.



#### 2 Check the shutter speed

Although the camera will set the shutter speed automatically, it's worth checking the shutter speed before you take a shot. The main thing to watch out for is a slow shutter speed when using narrow apertures or in dark conditions, which can lead to camera shake.



#### 3 Watch out for a flashing display

If you're shooting in bright conditions and want to use a wide aperture, you should also make sure that the camera is able to set an appropriate shutter speed. If the shutter speed display is flashing it means that the camera can't select the shutter speed, so you need to set a lower ISO or narrower aperture.



F/5.6



F/8



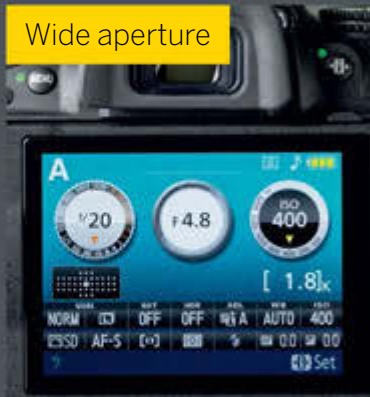
F/16



F/22



Wide aperture



Narrow aperture



### Aperture choice in different lighting conditions

The aperture you set will determine the amount of light that is able to enter through the lens. On most standard zoom lenses, a wide aperture such as f/4 or f/5.6 lets through the maximum amount of light. So you'll need to use this setting in poor light conditions. A narrower aperture such as f/11 or f/16 lets through much less light. You should use narrower apertures in brighter conditions.

### Depth of field

Along with controlling the exposure, your choice of aperture also has a creative effect on the amount of the image that is sharp in front of and behind the subject that you've focused on. This effect, known as depth of field, is one of the key creative decisions you have to make, because it can completely transform your image. Wide apertures such as f/4 or f/5.6 will give less depth of field than narrow apertures such as f/11 or f/16. So, to achieve the classic portrait effect where you only want the main subject to be sharp, with the background (and foreground) blurred, you should set a wide aperture. To keep as much of the scene sharp as possible, such as when shooting a landscape, you should set a narrow aperture.





# Shutter priority mode

Control the look of photos featuring moving subjects using your D-SLR's shutter speed

**S**hutter-priority mode works in a very similar way to aperture-priority mode, but as the name suggests, you control the shutter speed and the camera will select the aperture. The shutter speed is simply the length of time that the shutter mechanism is open for, from a very short time such as 1/1000 sec to a much longer time such as 1 second or more. The shutter speed that you choose will first be determined by how much light there is, with shorter shutter speeds being used in bright conditions, and longer ones being used in darker situations. When you're choosing longer shutter speeds, you also need to bear in mind that you may not be able to hold the camera steady enough to avoid camera shake. With your standard zoom lens set to 18mm, and the vibration reduction feature switched on, you should try to use shutter

speeds of around 1/10 sec or faster. While at the 55mm end you should use a shutter speed of 1/30 sec or faster.

Along with simply affecting the exposure of your images, the shutter speed that you use will also have a dramatic effect on how moving subjects will be recorded. The choice of shutter speed will determine whether this movement is sharp or blurred in your image.

Even though they work in very similar ways, shutter priority isn't quite as easy to use as aperture priority. The main reason is that there's a much smaller range of apertures available than there are shutter speeds. So in shutter-priority mode you're much more likely to come across situations where the camera isn't able to select an aperture to give the correct exposure than the other way around in aperture priority. ▶



## STEP BY STEP

## Using shutter priority

**1 Set the mode**

On most Nikon SLRs, shutter-priority mode is accessed by moving the mode dial to S. Then you select the shutter speed using the main command dial. On models with two dials, this is done by moving the dial on the rear of the camera in the default setup.

**2 Check the display**

Once you've selected the shutter speed you want, you should check that the camera is able to select an appropriate aperture. If the aperture display is constant, then you can go ahead and take your shot, but if it's flashing, you need to change your settings.

**3 Adjust the settings**

If the display is flashing, along with bars showing in the minus bars of the exposure indicator, you will need to either increase the ISO or set a slower shutter speed. If it's flashing, along with the plus bars, you need to reduce the ISO or set a faster shutter speed.



### Shutter-priority exposure mode

The main reason for choosing shutter-priority mode is to take control of whether moving subjects are recorded completely sharp, or blurred. In general terms, choosing a fast shutter speed will freeze any movement in the subject, while longer shutter speeds will introduce some blur. The key to mastering these settings is matching it with the speed and movement of the subject, and the type of effect that you want to achieve. Here you can see how the different shutter speeds have captured the moving water. The individual drops are visible 'frozen' in mid-air using the faster speeds such as 1/500 sec, but they become progressively more blurred as the shutter speed gets longer. While at long shutter speeds such as 1 second, there's almost no detail in the water.

1 second



1/8 sec



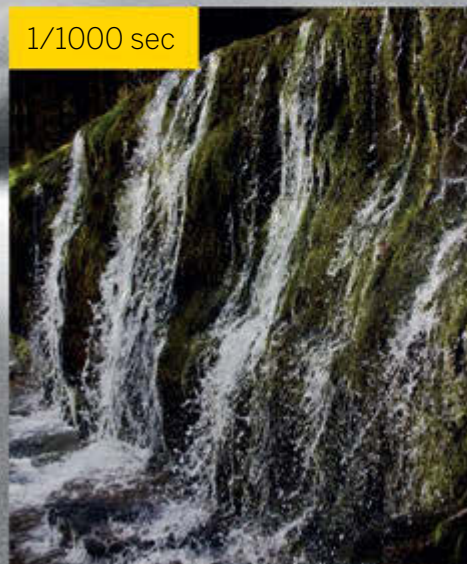
1/60 sec



1/250 sec



1/1000 sec







### Fast shutter speeds 1/500 sec or faster

You should use these shutter speeds when you want to freeze fast-moving subjects. To be able to use them you'll need bright conditions and/or high ISO settings, and in shutter-priority mode the camera will select a wide aperture.



### Medium shutter speeds 1/30 sec to 1/250 sec

These speeds are often good for taking general shots where there are no fast-moving subjects, because most normal movement will be frozen. In normal daylight you can use a low ISO such as ISO200, and in shutter-priority mode the camera will select a suitable aperture.



### Slow shutter speeds 1/15 sec to 1/2 sec

The faster of these shutter speeds will blur many subjects such as waterfalls or cars, and the slower ones will blur slower-moving subjects such as people walking. In daylight you should set the lowest ISO available on your camera, and you'll need to use a tripod to ensure sharp results at these speeds. Even at the lowest ISO it may not be possible to use the slower speeds in bright sunlight without using filters.



### Extremely slow shutter speeds 1 second and longer

You should use these shutter speeds when you want to blur even slow-moving subjects, but it isn't possible to use them in normal daylight without additional filters to reduce the light reaching the sensor. It's best to try using these shutter speeds in darker conditions, and you'll need to use a tripod to prevent camera shake.



# Manual exposure mode

Take complete creative control of your digital SLR and learn how to balance exposures

Once you've mastered the semi-automatic exposure modes, you may feel confident enough to take full control by using manual exposure mode. In this mode you have to select both the shutter speed and the aperture to get the correct exposure, along with the ISO.

The first thing to understand about manual exposure mode is that even though you can select both the shutter speed and the aperture, you can't just use any values and get correctly exposed results. You still have to use values that will give the correct exposure, which are going to be the same as using any other exposure mode, but mastering manual exposure mode does have some advantages over the other modes.

The first advantage is that once you've set the correct values, the camera won't change them. This is perfect for situations where the lighting on the main subject is constant, but the brightness or tone of the background changes. By using manual exposure mode you can get more consistent exposures, because in any other mode these changes in the background will cause the camera to alter the exposure. Even if the background tone or brightness doesn't change, the consistency of

using manual exposure mode is also useful when using flash. By setting the exposure manually you can set the camera to give the correct exposure for the background, and then use the settings on the flash to correctly expose the subject.

Once you've set the exposure mode to M or manual, you need to use the command dial to alter the settings. How you do this depends on whether your camera has one or two command dials. On models with just a single dial, turning the dial normally changes the shutter speed, but to change the aperture you have to press and hold down the +/- button while turning the dial. It's a little simpler on models with two dials, because you normally change the shutter speed using the rear command dial and use the front dial to alter the aperture.

To use manual exposure mode successfully you need a consistent and simple way to change all three of the settings to get the correct exposure. This will only really come with practice, but we've found that this is all about the order in which you alter the settings. This will vary according to the subject, situation and effect that you want, but the basic sequence is simple. First you set the most important setting, so if you want a specific depth of field you start with the aperture, or if you want to blur or freeze motion you would start by setting the shutter speed.

Once you've set this, you can then choose the ISO, according to the lighting, and finally the shutter speed or aperture (whichever you didn't set in the first step) to achieve the correct exposure. ▶





## STEP BY STEP

## Using manual mode

**1 Switch to manual**

To set the camera to manual exposure mode, turn the mode dial to M, and then set the most important setting first. So if you need a specific depth of field set the aperture, or to blur or freeze a moving subject you should set the shutter speed.

**2 Set the ISO**

Once you've selected the first setting you should now select the appropriate ISO for the lighting conditions. Generally, if it's bright sunshine you should set a low ISO, such as 100 or 200, while in darker conditions you should use a higher ISO.

**3 Balance the exposure**

Now you can adjust the remaining settings such as the shutter speed if you set the aperture first, or the aperture if you set the shutter speed first, until the meter indicator is in the middle of the metering scale. You can then take a test shot to check the exposure.

# Manual for landscapes

Manual exposure mode makes it easy to tame tricky sunrises and sunsets

**S**hooting a landscape you often have time to fine-tune your exposure, so it's the ideal subject to practice your manual exposure skills. Manual exposure is also perfect for shooting sunrise or sunsets, because the extreme contrast between the sky and the land can cause under- or over-exposure using one of the automatic modes.

In this situation you should use the exposure metering scale as a starting point, but then adjust the exposure to keep detail in the most important areas of the scene. So take a test shot, check it on the rear screen, and then reduce the exposure to get more detail in the sky, or increase it to get more detail in the land. If you use a tripod you can take multiple exposures and merge them later. ▶







### Manual mode for sports and action

Manual exposure mode isn't just useful for static subjects. Once you become comfortable using manual exposure it can be used for moving subjects to give more accurate exposures than shutter-priority or program mode in the right conditions.

You need to set up the exposure initially so that you get the correct exposure for the

main subject you're shooting. Then, as long as the lighting on the subject stays the same, the subject will be correctly exposed.

Using manual mode, rather than one of the automatic exposure modes, means that the exposure will be constant as the subject moves across different backgrounds. In any of the automatic modes the exposure would change according to the background, and the main subject would be over- or under-exposed.

# Using bulb mode

Expose scenes for longer than 30 seconds using the bulb setting in manual exposure mode

**A**long with the normal shutter-speed options in manual exposure mode, there's an extra setting called bulb (B) exposure. This setting is used for extremely long exposure times, especially if you want to use times longer than the maximum 30 seconds available on most models.

Bulb exposure works by opening the shutter when you press the shutter release, and it stays open for as long as you keep the button pressed. Then it will close the shutter when you release the button. This means that you can keep the shutter open for long periods, but you'll need a separate timer or stopwatch to time the exposure if you're

using a normal remote release. These extreme shutter speeds are usually used in very low lighting such as when shooting at night, and you'll need a tripod and ideally a remote release to get sharp results. You'll also need to make sure that your battery is fully charged, because using these long exposures takes a lot of power.

But unlike the normal manual mode, using bulb exposure means that you'll have to do without using the exposure meter in the camera. This makes using this exposure mode slightly more difficult than normal manual exposure, because without any metering to help you out, you have to determine the exposure by trial and error.





## STEP BY STEP

## Using bulb exposure for shooting at night

**1 Set up your camera**

You need to fix your camera on a tripod, then frame your image and switch to manual focus. At night it can be difficult to see to frame and focus through the viewfinder, so try using Live View instead.

**2 Initial settings**

Switch the camera to manual exposure mode, and use the command dial to select the bulb shutter speed option. Then change the ISO to 200, and finally adjust the aperture to f/8.

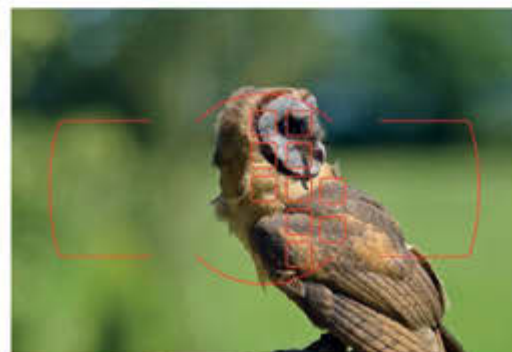
**3 Check and adjust**

Press the shutter release on your remote and keep it held down for 60 seconds, then check your result. If it's too dark try using a wider aperture such as f/5.6, or if it's too dark try f/11. ■



Master your **NIKON** D-SLR camera

## FOCUSING







# Focusing

Ensure your photos are sharp no matter how fast the subject is moving, nor how dark the lighting you're shooting in

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Learn how the default autofocus settings on your Nikon can help you to get sharp photos

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Set up your Nikon to focus on moving subjects to get sharp sports and action photos

## 74 Manual focusing and when to use it

Sometimes even the most advanced autofocus systems will fail. Take total control over the focusing by switching your lens to manual

Moving subject



Static subject

# The basics of autofocus

Learn how the default autofocus settings on your Nikon can help you get sharp photos

**W**hen it comes to getting sharp pictures the first thing you need to master is using the autofocus on your Nikon. The default settings for the autofocus are designed to get good results in most situations, so you should first get to grips with how it works straight out of the box.

These default settings will automatically choose where in the image the camera will

focus, and also which focusing mode the camera will use. Even though you don't have much control over the way the focusing works, understanding what it's doing will allow you to get the most from the fully automatic settings, and also decide when it's best to start overriding these settings manually.

The first thing to get used to is how you press the shutter release to activate

the focusing. You need to half-press this so that the camera will start focusing, but not so far that it will fire the shutter. Then you can explore the settings that the camera is using.

## The focus area

The default setting for this is AF-A, which means that the camera will automatically choose where in the image it will focus. When using the viewfinder to frame your

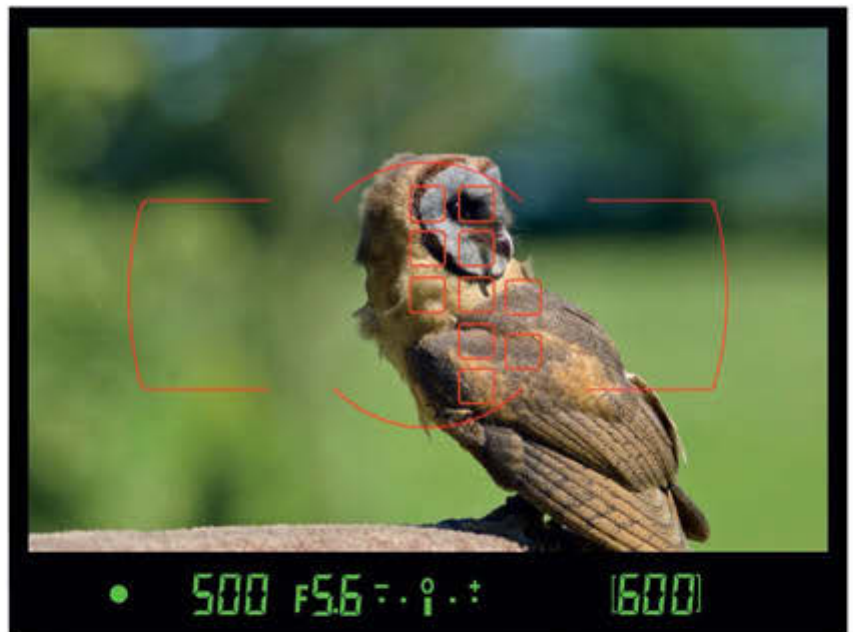


Single-servo focus mode is best for static subjects such as this resting dog



Your Nikon will attempt to focus on an object within the area marked by the bar and circle

Some Nikons use multiple focus points. The viewfinder here illustrates those used for the owl



images, the camera will only be able to focus using the specific points, which are usually contained within an area indicated by some faint lines (or brackets) displayed over the image. It normally analyses the image and looks for the most obvious subject, and usually the one closest to the camera.

### The focus mode

Along with deciding where in the image to focus, the camera will decide which focus mode to use. If the subject and camera are static, it will focus using the single-servo focus mode, which locks the focus on the subject once when you press the shutter release. But if it detects any movement, it will switch to the continuous-servo mode, where it will adjust the focus when the shutter release is half-pressed. ■

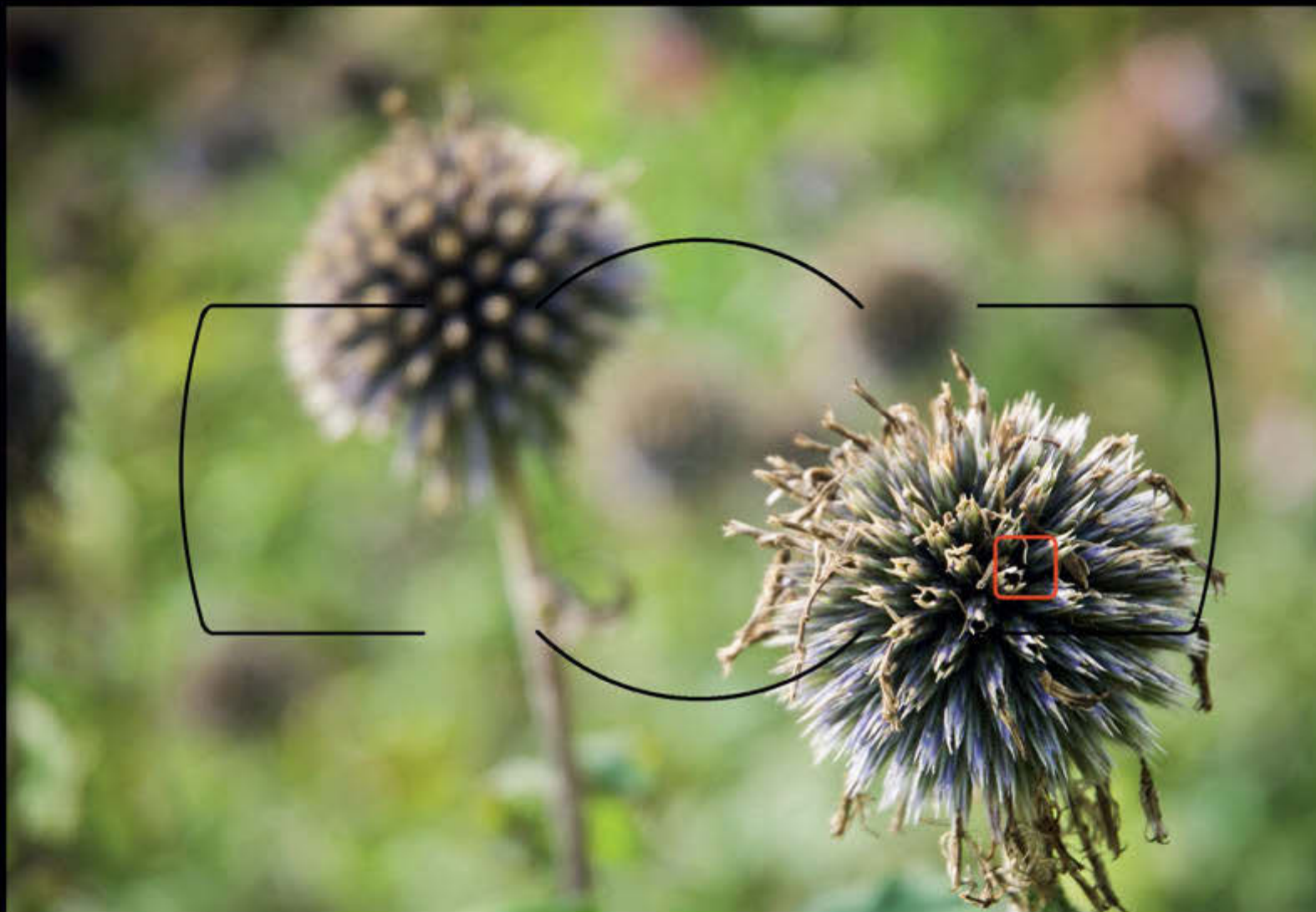


The default autofocus setting enables the camera to choose where in the scene the focus should be



Auto-servo AF mode chooses between AF-S (single) and AF-C (continuous) autofocusing modes.

Right focus point



# Focus points explained

Master focusing on off-centre subjects in your scenes by selecting the right focus point

Once you start shooting, and experimenting with where you place the main subject in the image, you'll find that it's rarely positioned in the middle of the frame, especially if you're composing using the rule of thirds (more on this later in the book). This is why every Nikon SLR can focus on different areas of the frame, by having a number of focus points spread across the

image. The area where these focus points are located is indicated in the viewfinder by thin black lines, often shaped like a brackets symbol with a circle in between.

The number of focus points available, and the area that they are located in, varies with different models, but generally there are more focus points in the more expensive cameras. But no matter how many points there are, the point that the camera is going to use needs to

be positioned over the subject that you want to focus on for sharp results.

The default setting on most Nikon SLRs means that the camera will automatically select the focus point (or points) that it thinks corresponds to the main subject in the image. But even though this option works well for many obvious subjects, you can't guarantee that it will select a point that corresponds to the area of the subject that you want to



Left focus point




Centre focus point



focus on. This is really important if you're using very shallow depth of field, because the focus point needs to be positioned exactly on the subject. So all models offer a manual AF point selection option as well.

### Using single area AF

Once you've selected the single-point AF mode, you can then move the

active focus point by using the multi-controller on the back of the camera. The active focus point visible in the viewfinder will move as you use the multi-controller, so all you need to do is move it so that it's positioned over the subject that you want the camera to focus on, for instance, the eyes of a portrait sitter, or the foreground interest in a landscape. 

## STEP BY STEP

### How to set single area focus



#### Use the info screen

With the rear information screen active, press the I or Info button to access the settings along the bottom of the screen. Then use the multi-controller to highlight the AF-area mode, and press OK.



#### Choose the autofocus area mode

In the AF-area mode screen use the multi-controller to choose the single-point AF mode, and press OK. This will then enable you to select any of the autofocus points available on your camera.



#### Choose the focus point

You can now use the multi-controller on the back panel to scroll through the AF points on your camera. These will be highlighted in the viewfinder, or shown on the rear information display, on many cameras.



### Focusing in Live View

Because the camera uses a completely different focusing system in Live View mode compared with the viewfinder, it doesn't have the same distinct focus points. In Live View mode, you still use the multi-controller to move the focus area around the screen, but you move a box that indicates the focus area anywhere on the screen.



### Autofocus modes

#### D7000 and above

Many models with two command dials offer an alternative way to access the autofocus area modes. On models such as the D7000 and above you press the button inside the AF/M switch next to the lens, and then use the front command dial to choose the AF area mode.



### Limitations of using the outer AF points

Your camera will have several focus points, but they aren't all the same. On most cameras the centre focus point (or central points on some higher-end models) are more sensitive than the outer points. This will affect how well they work in darker lighting conditions, particularly if you're using a lens with a narrow maximum aperture such as f/8 or narrower.

So if you're using the outer focus points and find that the camera is struggling to focus, you'll often find that switching to the centre point, and placing the subject in the middle of the frame, will then allow the camera to focus. ■



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# Single servo autofocus

Use the single-servo autofocus mode to get sharp pictures of static subjects

**S**imilar to using the correct focus point, letting the camera select between the two focusing modes doesn't always guarantee sharp results. So there are times when you'll get more consistent results by manually selecting the best mode for the type of subject that you're shooting.

The first of these modes is called single-servo, and this is most useful when you're

shooting static subjects. In this focusing mode, the camera will focus once when you half-press the shutter release, and once it has focused on the subject you'll see a green dot light up in the viewfinder (and you'll hear a beep if the audible signal is activated). The focusing distance will now be locked until you either take a shot and take your finger off the shutter release, or you lift your finger off the shutter release without taking a shot.

The camera won't then re-focus until you half-press the shutter release again.

## Consistently sharp

This method of focusing works best with static subjects because using the default settings it won't let you take a shot until the camera has focused. So, as long as the subject and the camera remain the same distance apart when you focus and fire the shutter,





Portraits are usually best shot using the single-servo autofocus mode

you're more likely to get sharply focused images than when using the other focus modes. Using the single-servo autofocus mode for most static subjects, you simply need to select the focus point that matches the position of the main subject in your image, then half-press the shutter release until the camera has focused, then press it fully to take the shot.

## THE D7000

### Single servo mode on advanced models

On models such as the D7000 and above you can change the focus mode by pressing the button inside the AF/M switch next to the lens. Then you use the rear command dial to choose the mode. For other models, use the step-by-step on the right.



But there are situations where either there isn't a focus point that matches where you want to position the subject, or the camera isn't able to focus, particularly when using the outer focus points. In these cases you'll need to use another technique, known as focus lock, to accurately focus on the subject. Turn over the page to find out how to use this feature...

## STEP BY STEP

### How to set single servo AF



#### Activate the information screen

To change the focus mode, activate the settings along the bottom of the information screen by pressing the I or Info button. Then navigate using the multi-controller to the Focus mode setting and press OK.



#### Choose the focus mode

On the Focus mode screen you simply select the AF-S option using the multi-controller, and press OK to confirm it. Now the camera will only focus once when you half-press the shutter release.

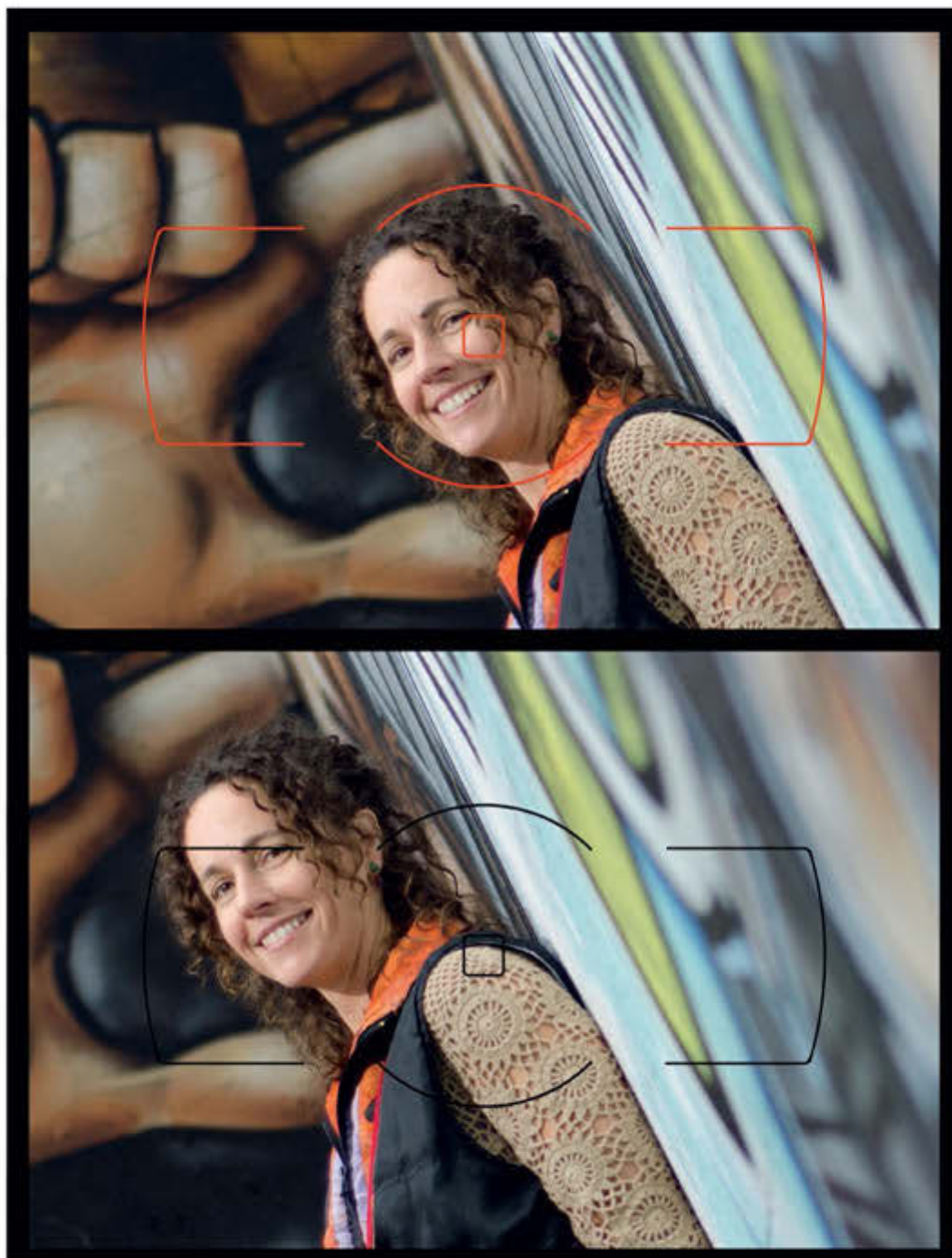


### The focus lock technique

The central focus point (or points) are able to focus in poor light or on lower-contrast subjects, so you may find that you have to use these instead of the outer points in some conditions. But this means that the subject needs to be positioned in the centre of the frame, which isn't always the ideal position. Using the focus lock technique enables you to use these more sensitive central focus points, but still position the subject away from the centre of the image.

With the camera in single-servo focus mode, select the centre focus point and point the camera directly at the subject so that it matches the position of this central focus point. Then half-press the shutter release until the camera focuses. To lock this focus, you need to keep the shutter release half-pressed, and then you can re-frame your shot. Once you're happy with the framing you can fully press the shutter release to take the shot.

This technique takes a little practice, because you need to make sure that you keep half-pressing the shutter release while you re-frame, because if you take your finger off the button and re-press it, the camera will refocus on whatever the focus point is positioned over. You also need to make sure that the distance between the camera and the subject stays the same when you re-frame the shot, otherwise the area of sharp focus will either be in front of or behind the subject.



### Using the AF-L button

In some situations it can be difficult to keep half-pressing the shutter release as you re-frame your shot when using focus lock. But there's an alternative way to use this technique using the AE-L/AF-L button on the back of the camera.

To use this, you focus as normal by half-pressing the shutter release. But once the camera has focused you then press and hold the AE-L/AF-L button with your thumb. You can then take your finger off the shutter release, re-frame your shot, and as long as you keep holding down the AE-L/AF-L button, the

camera won't re-focus when you press the shutter release fully to take the shot.

In the default settings, this button is used to lock both the focus and the exposure, though, which isn't very convenient in most situations. So when you hold it down to lock the focus it will also lock the exposure of the original framing. If you want to use this button to only lock the focus, on many models you'll find this option in the Controls menu of the Custom Settings. Simply choose the Assign AE-L/AF-L button, and select the AF lock only option. ■



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### STEP BY STEP

## Setting continuous servo AF



### Activate the information screen

To change the focus mode you activate the settings along the bottom of the information screen by pressing the I or Info button. Then navigate using the multi-controller to the Focus mode setting and press OK.



### Choose the focus mode

In the focus mode screen, simply select AF-C option using the multi-controller, and press OK to confirm it. Now the camera will focus continuously when you half-press the shutter release.





### Back-button focusing

While continuous-servo autofocus works well using the shutter release to activate the focusing, many action and sports photographers prefer to use a technique known as back-button focusing. This involves activating the focusing with your thumb to press a button on the back of the camera, leaving the shutter release free to be used just for firing the camera. Professional Nikon SLRs have a dedicated AF-on button on the back of the camera, but on most models you have to use the Custom Setting menu to assign this function to the AE-L/AF-L button.

Once you've assigned the AE-L/AF-L button to AF-on, when you've framed your shot so that the focus point is over the subject, you simply press and hold the AE-L/AF-L button with your thumb. Then track the subject so that the AF point stays over it. Then you can simply press the shutter release when you want to take a shot (or multiple shots).

### Extra focusing options

There are two extra features available in continuous-servo focus mode, compared with single-servo, to make it easier for the camera to keep moving subjects in focus. Both of these allow the camera to change the focus if the subject moves away from the focus point you've selected. Just like any focus mode, remember that the outer focus points won't be as accurate or as quick as the centre points on most models. So, even these two modes can struggle to keep up with fast-moving subjects, particularly in low light or with long focal length lenses.



### 3D-tracking

In this mode, once you've initially focused using one focus point, the camera will analyse the subject within this point, and if it moves in the frame it will move the active focus point to follow the subject. This is good if the subject is moving erratically, making it impossible to keep it in the same position in the viewfinder.

### Dynamic-area AF

The Dynamic-area mode works slightly differently to 3D-tracking, because you have the option of limiting the number of frames that the camera will use. In this mode the camera will again analyse what is in the active focus point when you half-press the shutter release. Then, if this subject moves, it only examines the focus points surrounding the original one to find the subject, and if it's still there, it will keep focusing on it. This mode is good for subjects that you're able to keep roughly in the same area of the frame, such as a bike or a car, which move in a reasonably predictable fashion. ■





# Manual focusing

Take total control over the focusing by switching your lens to manual

**T**he autofocus system works well for most subjects and situations, but there are times when it will struggle to focus accurately. In these cases you'll need to switch to manual focus, and then use either the image in the viewfinder or Live View to focus on the subject. Using manual focusing can take some practice, particularly when you're using shallow depth of field, where accurate focusing is critical. So it's best to give it a try before you need to use it for a crucial shot. ▶





### Using lenses without a manual focus switch

On some lenses there isn't a switch, so if you're using one of these you need to use one of two ways to switch to manual focus, depending on your camera. On models such as the D3200 and D5200, you select manual focus from the focus mode settings on the rear information screen. While on models such as the D7000 and above there's an AF/M switch on the body next to the lens mount, which can be switched to M to allow manual focusing.



### STEP BY STEP

## How to set the manual focus mode



### Set the lens to manual

On most Nikon lenses there's a switch marked A and M on the side of the lens, which you simply switch to M to allow manual focusing.



### Focus the lens

Now you can rotate the focus ring on the lens to alter the focus. This is the critical part, and it takes practice to see when the image in the viewfinder is accurately focused.

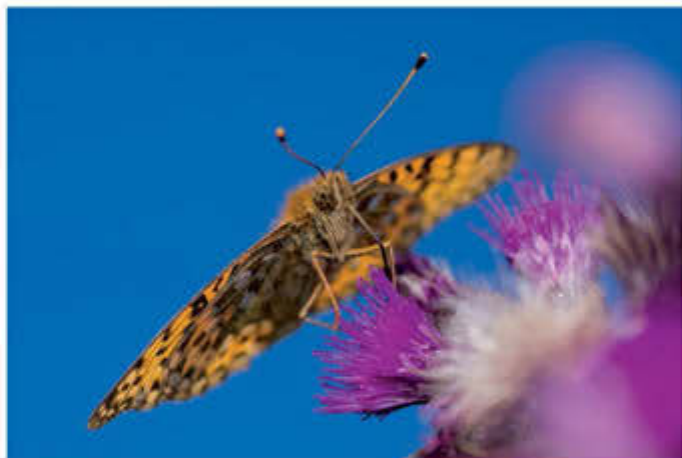






### Low-contrast subjects

The autofocus system needs some contrast in the scene to focus accurately. So when shooting low-contrast subjects, such as shooting in mist, or where there are large areas of plain sea or sky, you may need to switch to manual.



### Close-ups

Because of the shallow depth of field, it's often difficult to accurately focus using AF on close-ups.



### Shooting into the light

The contrast and brightness when shooting into the light can cause the autofocus to struggle to lock on to the subject, especially if the subject is light-coloured or in very deep shadow.





### Night

Dark conditions can make it impossible for the autofocus to work accurately. In these conditions you'll often get better results by switching to manual focus.



### Using manual focus for moving subjects

In most situations you would use continuous-servo AF mode when shooting moving subjects, but there are times when you can get better results using manual focus. One of the most common situations is when shooting a subject such as motor racing or cycle racing, where the position of the subject is reasonably predictable, but it's moving too fast (or is only in sight for a short time) making it impossible to keep it in the viewfinder long enough to use autofocus. This is where a technique known as pre-focusing can help you get sharp results that would otherwise be impossible.

To use this technique you first need to be able to predict where the subject is going to be positioned. Then you can focus on this point, either using autofocus or manual. But if you used autofocus, you need to switch to manual to prevent the camera re-focusing. Once you've fixed the focusing, all you need to do is to fire the shutter just as the subject reaches the point that you've focused on. ■



# Master your NIKON D-SLR camera

## LIVE VIEW AND IMAGE REVIEW







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Use your D-SLR's Live View and image review features to check your shots before and after you take them

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Use the in-camera histogram and highlight warnings to check the exposure of an image

## 92 Check image sharpness

Zoom right into the image on the back-panel LCD to check the sharpness of the main focal point in your photos while on location



# Introducing Live View mode

Live View mode is the LCD alternative to the viewfinder. Here's how to access it



**T**here are three different controls that Nikon uses to activate the Live View function on different models. Even though the controls are different, they are all marked with the same LV icon, so if you're unsure which control your camera uses, look out for the icon.

## Button

This is the most common control across the Nikon range. To access Live View you simply press this button. Some models also have a switch around this button to swap between stills and video Live View modes. For normal shooting, make sure you select the stills option.

## Lever

On models such as the D5100, D5200 and D5300, there's a large lever on one side of the main exposure mode dial, which you pull and release to activate Live View. ➡









# Live View options

Discover how to access the different options available using Live View mode

Once you're in Live View mode, you have several options for which information is displayed on the screen along with the Live View image. To change the display options you simply press the **I** or **Info** button, depending on your camera, to scroll through the different screens. These will vary on different models, but here's an overview of the main options...



## Clean

In this mode the image is clear of any information, making it easier to see the whole image.



## More comprehensive settings

There's a list of settings along the top of the screen, over the Live View image. This is great for checking your settings, but it can be distracting when you're framing your image.



## Grid overlay

This mode is good for lining-up horizontal and vertical lines in the image, to make sure that the camera is level.



### Focus area selection

Just like using the viewfinder, in Live View mode you can move the focus area to allow you to focus on off-centre subjects. The active area is indicated on the Live View screen by a red (or green) box, which you move by using the multi-controller. The colour of the box indicates whether the camera has focused, with red indicating that the camera hasn't focused at all, a solid green box indicating that the camera has focused, and a flashing red box indicating that the camera is unable to focus. The main difference between moving the autofocus area in Live View and through the viewfinder is that in Live View the area can be positioned anywhere on the screen. This offers more precise positioning than the distinct points that you select in the viewfinder, and you can also position it right at the edge of the image, if that's where you want to focus. ■





# Master your NIKON D-SLR camera

## LIVE VIEW AND IMAGE REVIEW



# Live View in action

Discover when it's better to use Live View mode rather than the viewfinder

**L**ive View offers many advantages over the viewfinder to frame your images, especially when shooting macros, still lifes, and landscapes, but Live View system does have some limitations.

## Autofocus

The focusing system used when you're in Live View mode is different from the one used when you're shooting through the viewfinder. The biggest difference you'll find is that the autofocus in Live View is slower and less responsive than the viewfinder focusing. This is okay when you're shooting static subjects, but it means that it's not a good way to shoot moving subjects, because the camera can struggle to focus accurately.

## Aperture settings

The other main limitation of the Nikon Live View system is that the aperture setting used for the image shown on the screen is fixed when you start the Live View mode. This means that even if you're in the aperture-priority or manual

exposure mode, any change you make to the aperture setting isn't used for the Live View image. The really confusing part of this is that the aperture value displayed in the exposure readout will change when you move the command dial, but the image on the screen will still be using the value that you set when you switched on the Live View.

So, to see the effect of the changes on your image you have to switch Live View off, and then back on again. This isn't a problem for simply framing your image, but you need to be aware of it if you're using the screen image to show you the depth of field in your final shot.

## Manual focusing

Despite its limitations, Live View is really useful if you're shooting in manual focus mode. This can be difficult to master when you're holding the camera, so it's best to use a tripod or other support, and also use aperture-priority or manual exposure mode. To get the most accurate results, it's best to follow the simple sequence of settings in the step-by-step guide below.



### 1 Set a wide aperture

Before you switch on Live View, select the widest aperture available on your lens, such as f/4 or 5.6. Then switch on Live View and move the focus area using the multi-controller so that it's positioned over the part of the subject you want to focus on.



### 2 Zoom in

Pressing the + zoom button on the back of the camera four or five times enables you to magnify the image, which is centred on the focus area you've selected. Then you manually focus until the screen image is sharp. You can move the magnified area using the multi-controller.



### 3 Exit Live View

At this stage you can zoom out using the – zoom button (or by pressing the OK button once) so that you return to the full image. Finally, switch out of Live View mode and then change the aperture to the value you want to use for your shot.



# Review your images

See the results of your captures instantly by hitting the play button and scrolling through your photos

**R**eviewing your images on the rear screen of your Nikon is a great way to get instant feedback on the composition, exposure and sharpness of your images. But just like many of your camera's features, there's more to this playback facility than just looking at a single image on the screen.

You can also choose whether images are displayed automatically when you're shooting, and you can change their orientation. Which options you find useful will come down to how you shoot and your own preferences, so you may need to try out the different settings to find out which works best for you.

## Basic review mode

Once you've set up the reviewing options you can start to get to grips with playing back your images. To bring up an image on the screen you simply need to press the play button. To go to the next image on the memory card you press the right part of the multi-controller, or the left for the previous image. If you want to scroll through loads of images you can hold down the left or right part of the multi-controller, which will cycle through the images until you release the multi-controller.

Another basic feature of the playback screen is deleting unwanted shots. To do this you simply press the



Don't be too hasty with the delete button. You may regret it later...

rubbish bin button, which will bring up a warning screen. If you're sure you want to delete the image, simply press it again. This photo deletion feature is great for getting rid of unwanted test images, but because it's so easy it can be tempting to delete images that don't quite work. This may seem like a good idea, but it should be used with care for a couple of reasons. First, it's often quite difficult to see the best shot on the small screen, and second, shots where you didn't get everything right can be invaluable when you're learning about different settings and techniques.

## Review options

In the playback menu you'll find that you can choose from several options, depending on your camera. But every model has these basic features.

## Automatic image review

This option selects whether the image is displayed immediately after you've taken a shot. This is usually set to on for normal shooting, because it's often handy to be able to immediately see the image without having to press the playback button.

There are a couple of reasons you may want to turn this feature off. The first is if you're shooting fast-moving action and you don't want to be distracted by the image appearing on the screen after every shot or sequence of shots. Second, you may want to maximise the battery life.

## Rotate upright images

With this option on, the camera will rotate images shot in the upright format, so you can look at both horizontal and vertical images in a sequence without having to turn the camera on its side.

The slight downside to this is that the upright images are much smaller on the screen with the rotate option on, so switching it off will mean that both horizontal and vertical images will fill the whole screen, but you have to keep turning the camera to match their orientation. ■

Use the multi-controller to scroll through the pictures on your camera







# Check exposure using the histogram

Discover how you can get more information about the exposure of your shots using this review mode

**T**he image review feature on your Nikon enables you to do much more than simply play back your images. The extra options include two display settings to help you to check the exposure of images, called the highlight warning and the histogram. Once you're in the playback mode on your camera, you can switch between the different display modes by using the top and bottom parts of the multi-controller. The histogram is a graphic display of all of the tones from the shadows to the highlights, and gives you loads of information about the exposure, while, as the name implies, the highlight warning just displays the over-exposed highlights.

## Selecting image review options

In the default settings, your camera may not offer all of the different display options when you play back your images. To activate these options you need to select the different exposure display options in the playback menu of most cameras. These will either be in the playback

display options or the display mode menu. Then you can select from the different display options available on your camera.

There are highlights options available in this menu, which you select by using the right-hand area of the multi-controller, so that the box is ticked. Then you either press OK or scroll to the Done option in the menu to activate this option. When it comes to the histogram, there are often two options, which you activate in the same way as the highlight warning. To display the single basic histogram, along with other shooting data, you select the Overview option on many cameras. There's also an RGB histogram option, which displays the individual red, green and blue channel histograms, along with the overall histogram. ▶









### Highlight warning

The highlight warning display is a quick way to check the basic exposure of the image you've captured. With this mode active, any areas of the image that are over-exposed will flash.



### Histogram

The histogram display offers more detail and information about the whole exposure of your image than the highlight warning, but you need to understand what it's showing you to be able to use it properly.

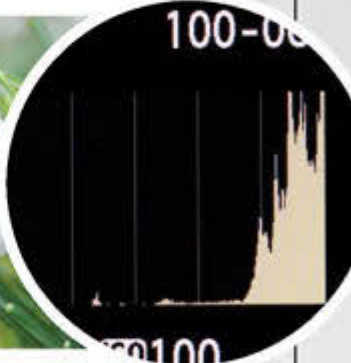


### The histogram explained

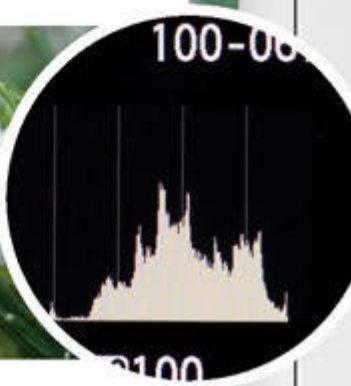
The histogram is a graph of all of the tones contained within your image, from the darkest shadows on the left, to the brightest highlights on the right. The higher the peak of the graph, the more of that particular tone is in the shot, so although the graph of a 'perfect histogram' would appear smooth, this rarely occurs in the real world, so don't be too concerned with peaks and troughs within the histogram. When it comes to using the histogram to judge the exposure, the most important areas are the extreme left and right of the graph. Large gaps or overflows at either end of the graph will tell you when an image is over- or under-exposed.



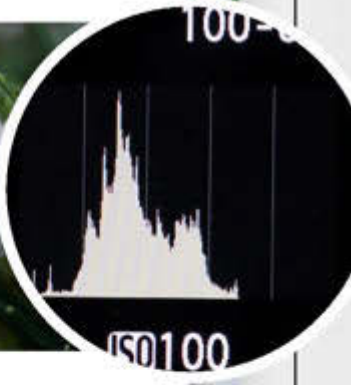
### Typical histogram displays



**Over-exposed**



**Correctly exposed**



**Under-exposed**



### High-contrast subject

You'll find situations where it's impossible to get a histogram where the peaks are all neatly contained within the graph. This means that the brightness range (also known as contrast) from the shadows to the brightest highlights is too large for the camera to keep detail in the whole image. Using the basic settings on your camera you can choose whether you want to keep detail in the highlights and lose detail in the shadows, keep shadow detail and lose the highlights, or lose some detail in both the highlights and the shadows.



### RGB histograms

Along with the overall exposure, the separate RGB histograms allow you to check the exposure of the red, green and blue channels in your image.



# Check image sharpness

Zoom right into the image on the back-panel LCD to check the sharpness of the main focal point in your photos while on location

**T**he basic playback feature is useful for checking the framing and composition, but this image is too small to see any real detail in the image. To check whether the camera has focused properly or whether the image is blurred due to camera shake, you need to zoom into the image.

You can easily do this by pressing the plus magnifying glass button on the side of the screen. This operates in steps, so if you press it once you go to the first magnification, and then it will zoom in closer each time you press the button. To check basic sharpness you can usually see enough by pressing the magnifying glass button two or three times, but for checking fine detail you'll need to press it four or five times. Once you've zoomed in you can move around the image using the multi-controller, and you'll see a small navigation screen in the bottom right of the image to show you which area you've zoomed in to.

If you want to reduce the magnification you can simply press the minus magnifying glass, but just like the plus button this works in steps. So, if you've zoomed right in, it can take several presses to see the whole image again. To avoid this you can simply

The thumbnail views are great for quickly checking the entire contents of a memory card



Multiple presses of the minus button brings up the calendar display

press the button in the middle of the multi-controller to go back to the full screen view with a single button press.

## Multiple image modes

As well as showing a single image and zooming in on details, you can also display

several images on a single screen.

This can be handy for quickly checking what images are stored on a memory card, without having to scroll through each individual image. Or alternatively, it can also make it easier to find an image on the card if it contains loads of shots that would take a long time to search through individually.

To see multiple thumbnail images, all you need to do from the normal full screen view is press the minus magnifying glass button. Similar to the magnified view, this works in steps, so the first press will bring up four images, the next will show nine, and a third press will show 72 tiny images.

From this view you can zoom back in again, but if you press the minus magnifying glass button again it will enter a completely different viewing mode. This time it will display a calendar and thumbnail view, which is handy for finding images by date if you've used the card over a long period of time.

Again, you can use the plus magnifying glass button to return to the other views, but using the button in the middle of the multi-controller is a quick shortcut to get back to the normal view. ■







# Master your NIKON D-SLR camera

## LENSES AND COMPOSITION





# Lenses and composition

Discover how to choose the appropriate lens for your creative needs, and how to compose images effectively

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The sensor lies at the heart of your camera, so you need to understand how its resolution and size affects the composition of your images



# Get to know the standard zoom

Before you start splashing out on extra lenses, make the most of your standard zoom lens

**M**ost cameras are supplied with a standard zoom lens with a focal length of 18–55mm. This zoom range is suitable for shooting a whole range of subjects, so before we look at what other lenses can offer, it's worth getting the most from the standard zoom lens.

Used at the 18mm setting you can include a wide view of the scene, which is perfect for landscapes, street scenes or groups of people. While the longer settings such as 55mm will include less of the scene, making it better for individual portraits, details and even close-ups of subjects like flowers.



## Vibration reduction switch

Some lenses will have a switch marked VR on/off. This is to activate a system called vibration reduction, which is used to reduce blur due to camera shake. In normal hand-held shooting this should be switched on, but you should switch it off if the camera is fixed to a tripod.



## Zoom ring

You turn this ring to alter the focal length of the lens. The smaller the number, the more of the scene you can include, and the higher the number, the less you can include.

## What do the numbers on the lens mean?

### Maximum aperture

You'll find a number printed on the lens either preceded by f/ or 1:, which tells you the aperture of the lens. This aperture is an iris inside the lens, allowing more or less light through it, which is primarily used to control the exposure. The sequence of numbers can be confusing, but a smaller number, such as f/4, lets in more light than a larger number,

such as f/8. The number or numbers printed on the lens only tells you the maximum aperture or apertures available on the lens, not the range of apertures available. On many zoom lenses you'll find two numbers printed, such as f/4–5.6 (or 1:4–5.6), because the maximum aperture changes as you zoom the lens. So the smaller number is the maximum aperture at the shortest focal length, and the

larger number is the maximum aperture at the longest focal length.

### Focal length

This number measured in millimetres tells you how much of the scene you can include in your image. The smaller the number, the wider the view will be, and the higher the number, the narrower it will be.



### Filter thread

Most lenses have a screw thread for attaching filters and other accessories to the front of the lens. The size of this will vary with different lenses, so you need to make sure that you get the right size for your lens. This size may be printed on the lens, or inside the lens cap, indicated by a circle with a line through it.

### Focus ring

This ring alters the distance that the lens focuses at. When the camera and lens are set to autofocus mode you shouldn't touch it, because you focus by pressing the shutter release button. When you activate the autofocus on many lenses the ring will move. The only time you should move the focus ring is when you switch to manual focus.

### Lens specification

These numbers tell you the main features of the lens such as the focal length and maximum aperture, along with other information about AF and so on.

### AF/manual switch

This enables you to change between automatic and manual focus modes. On some Nikon models there's an additional AF/manual focus switch on the body, but the one on the lens is the easiest and best way to switch focus modes.







# Specialised lenses

The ability to change the lens is one of the main features of your Nikon. Here's what they offer...

**W**ith so many different types and numbers, it can be pretty difficult to choose which lens you need to help you get better images. It's not a decision to take lightly, because lenses can be expensive, so it pays to spend your cash wisely.

The best way to decide whether you need an extra lens is to take a look at the images that you've already taken, and try to work out what would have made them better. For example, if the subject isn't big enough in the image because the subject was too far away, then you need a longer focal length lens. But if it was because you were

shooting a small subject, then you need a lens that will focus closer, such as a macro lens.

There's no such thing as an ideal lens, because it will depend on what sort of subjects you shoot, the type of image that you want to produce and to some extent how much cash you want to spend. But no matter which camera you have, a good lens will help you get better quality results, and increase the range of subjects that you can shoot. So, once you understand what each type of lens does, it will help you make the right decision when it comes to buying extra lenses. Turn the page to see our selection of those available. ►








### Telephoto

Telephoto lenses have longer focal lengths, allowing you to make distant subjects appear much larger in the image. The higher the focal length, the greater this magnification will be, but it will also magnify any camera movement. So most current telephoto lenses have a vibration reduction system to help reduce camera shake, but you still need to keep an eye on the shutter speed, particularly in dull lighting conditions.

The cheapest telephoto lenses for DX Nikon cameras have a focal length of 55-200mm or 55-300mm, which will make the subject approximately either 4x or 6x larger in the image than a standard 18-55mm lens.



### Wide-angle

Lenses with shorter focal lengths than your standard zoom are called wide-angle, because they enable you to include a much wider view of the scene in front of you. They are perfect for shooting landscapes and cityscapes, because their wider angle of view allows you to include more of the subject than a standard zoom lens. They also give greater depth of field, which is useful for most landscapes, where you want to keep as much of the image as sharp as possible. For most DX cameras a 10–20mm or 10–22mm lens will give you a much wider view than your standard lens, without the extreme distortion that can be a problem with even wider lenses. 







### Macro (or micro)

Unlike telephoto or wide-angle lenses, macro lenses aren't defined by their focal length, but by their ability to allow you to focus much closer than a normal lens. By focusing closer you can fill the frame with tiny subjects such as plants or insects, which would be impossible with other lenses.

Macro lenses normally have a focal length of between 35mm and 105mm. Choosing which focal length will suit your needs will depend a little on your budget and the type of subjects that you want to shoot. The shorter focal length macro lenses are generally cheaper, and are perfect for many close-ups. The longer focal length macro lenses are more expensive, but they often have vibration reduction to help you get sharp results. The longer focal length also means that you don't have to get as close to the subject as a shorter focal length lens, making them better for shooting subjects such as insects and other small animals, because you're less likely to scare them away.



### Prime

Prime lenses are simply any type of lens that doesn't have a zoom facility, so they have a fixed focal length. The main advantage that most prime lenses have over zooms is a wider maximum aperture. This makes them ideal for shooting in low light, and also getting shallow depth-of-field effects. They are available in a huge range of focal lengths from extreme wide-angle to telephoto, but the most common and affordable prime lenses are the 35mm f/1.8 and 50mm f/1.8. The lack of a zoom may seem limiting at first, but including more or less of the scene is simply a case of moving further away, or closer to the subject. So they can be a great way to force you to explore

different viewpoints, rather than simply standing in one position and zooming in or out.

### Superzoom lenses

At the opposite end of the lens options to prime lenses are a range known as superzooms. These lenses have a much greater range of focal lengths than a normal zoom lens, such as 18-200mm or even 300mm. They are a good 'all in one' option for shooting a wide range of subjects, without having to change lenses. The main disadvantages of these compared to lenses with a more limited zoom range is that they can't focus quite as close and they can be bulkier and heavier than a basic standard zoom. ■



# Basic composition

Discover how to avoid some of the most common mistakes when framing and composing your shots

**A**long with the more technical skills, learning about composition is one of the best ways to improve your photography. It's often a case of what looks right to you, but there are plenty of tricks and rules that can help you to get better results.

Composition and framing, like any creative choice, isn't a matter of strict right and wrong, but there are some things that you should generally try to avoid for a balanced and pleasing composition. ▶



## Horizon not straight

This is a classic mistake, which is simply a case of not holding the camera level. It's really noticeable if you're shooting landscapes or the sea, where the horizon is clear and obviously should be level. You can correct this after you've downloaded your image by cropping the image, but this will reduce the number of pixels in the image, so you're better off getting it right in camera. Many Nikon models have a built-in virtual horizon, which can be displayed on the screen, or alternatively you can buy a spirit level that fits into the hotshoe of the camera.



### Subject too small

Not getting close enough to the subject, or shooting with a wide-angle lens, is a common problem. It's often caused by simply wanting to make sure that you get everything in the shot, and also not having the confidence to get in close to a subject. But it's also due to paying too much attention to one part of the scene, and forgetting about the areas around the edges of the frame. Try to keep looking around the frame, and if there's space around the subject, try zooming in or getting closer to it.





### Parts of the subject missing

This is the opposite of the subject being too small in the frame, yet the problem can have a similar cause of concentrating too hard on one part of the scene, and not paying attention to the whole image. The best way to avoid this is to quickly check all of the way around the edges of the image before you fire the shutter, to check that you haven't chopped off an important part of the subject.



### No focal point

If you've ever taken a shot of a beautiful view, but the result looked a bit dull, then this may well be the problem. A wide open view can look very flat in a still, two-dimensional image, because there's nothing to keep your attention. So look out for strong focal points such as buildings, trees or rocks, and base your image around this, rather than just taking a picture of a view.

### Subject or horizon in the middle of the image

It's tempting to always put the main subject in the middle of the frame, because it's easy to think that this guarantees that it's the centre of attention. But generally your brain doesn't quite work like this, because if the subject is in the middle of an image, we can find it static and a little boring. So it's generally better to place the subject just off-centre, because it prevents the image appearing too symmetrical, and it makes it more likely that the viewer will look around the image. ■





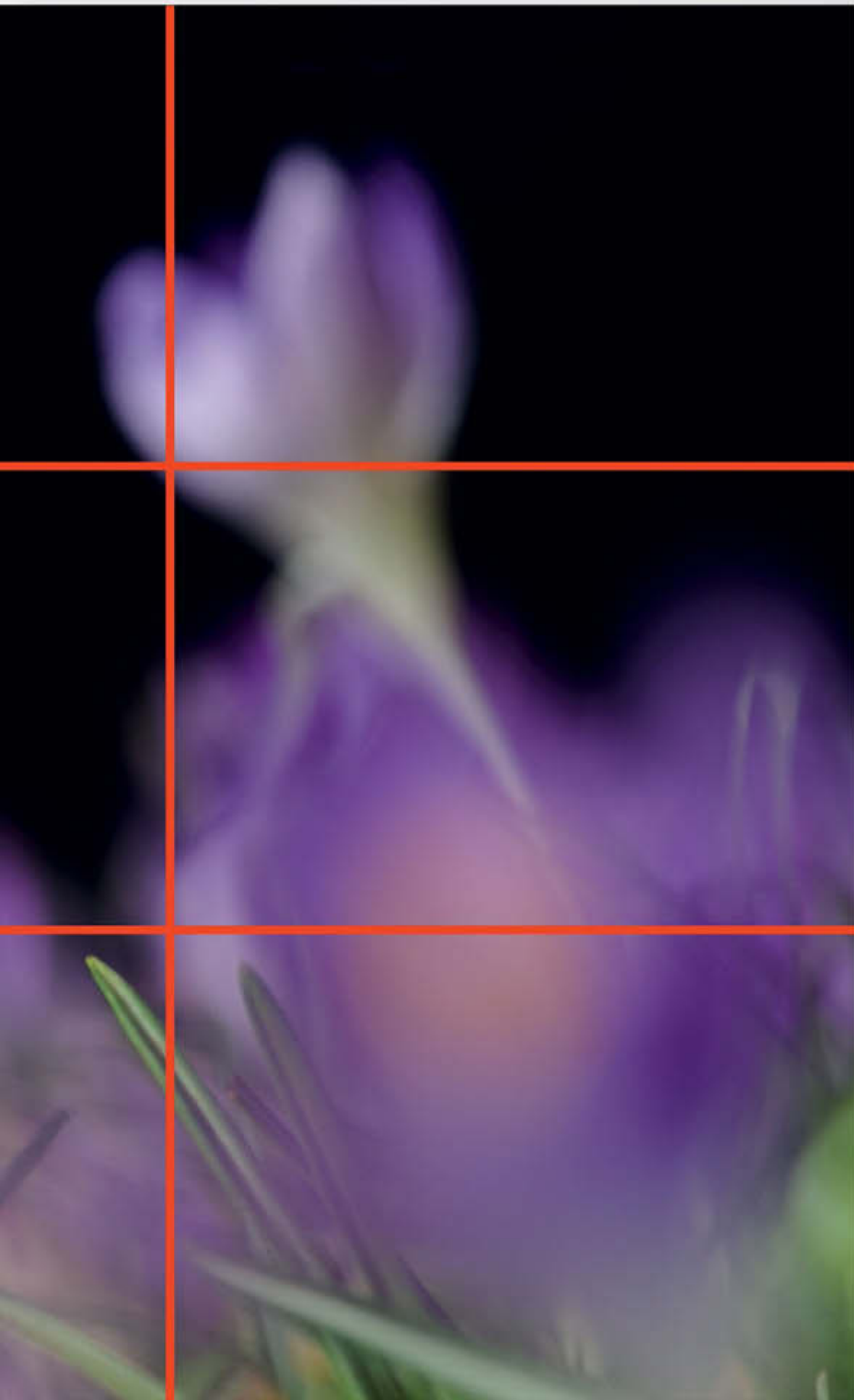
# Advanced composition

Improve the composition of your images using professional framing techniques

**A**voiding the basic mistakes when framing your pictures is all well and good, but you also need to know how to use the different elements of the scene to produce the best composition. So, here are the most useful and commonly used tricks and techniques that you can use to improve the composition of your images.

Remember that you don't just have to use each one on its own. In fact, combining two or three composition techniques often produces more interesting images. For instance, you can use the rule of thirds, foreground interest and leading lines together to create a balanced image with a greater sense of depth than if you only used one of these in isolation. ▶





### The rule of thirds

When it comes to positioning a subject away from the centre of the frame, this rule of composition can often be used to decide where in the frame you should place it for the most balanced and pleasing composition. To use this rule you imagine horizontal and vertical lines dividing the image into nine sections, like in the image on the left.

You can then use these imaginary lines to help you position the main elements of your image. For instance, you could use one of the horizontal lines to position the horizon in a landscape, or one of the vertical lines for the person in a portrait.





### Foreground interest

Including an interesting subject, texture or colour in the foreground of your image can help to add a sense of depth. This is particularly useful when using wide-angle lenses, because you tend to include more of the foreground when using this type of lens.



### Leading lines

Look out for either natural or man-made lines that lead your eye from the foreground to the main subject in the background of your image. Similar to using foreground subjects, leading lines can also add depth to your images. ▢






### **Background**

A messy, distracting background can ruin an otherwise successful composition. You can either find a new viewpoint that gives a less distracting background, or try using shallow depth of field to blur the detail in the background.





### Natural frames

Finding objects around the edges of the image can help to draw attention to your main subject, by creating a border around it. This can be all of the way around, such as a window or opening, to frame the whole subject. But it can also work if it's positioned only over clear or uncluttered areas of the image, such as the sky. A classic way to achieve this is to use the branches or foliage of a tree around the top of the frame. 







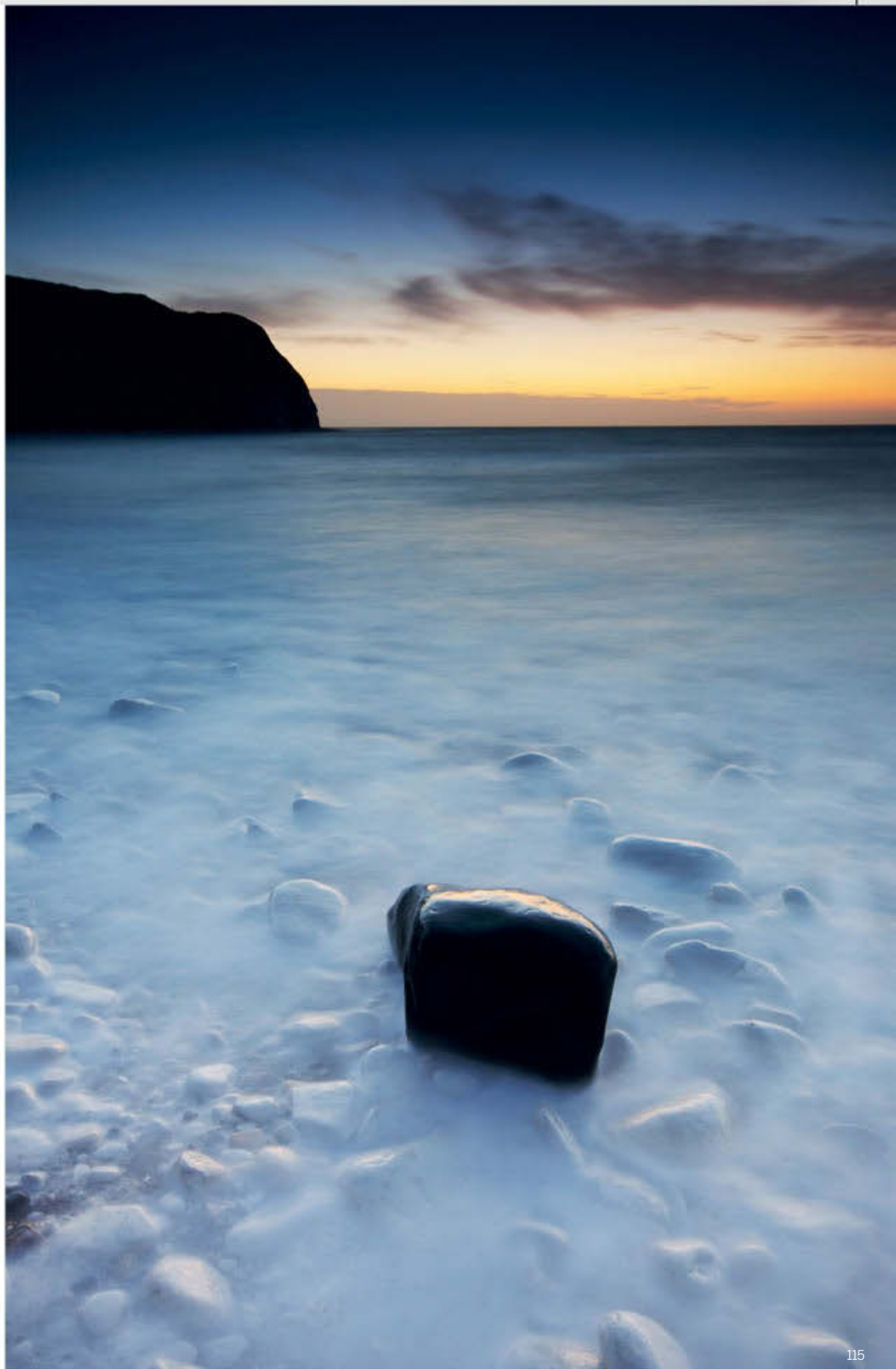
### Balance

While positioning the main subject to one side of the image is generally a great idea, if all of the focal points are on one side, the image will become unbalanced. So, when there are several points of interest, try to position one or more on the opposite side of the image to the main subject, to create a more balanced composition.



### Simplicity

Generally speaking, the fewer focal points there are in an image, the simpler and stronger the shot will be. So, when framing your shot, ask yourself whether you need to include everything in the image, or can you crop out any objects to create a simpler and more effective shot? ■





28mm DX




# Resolution and sensor size

The sensor lies at the heart of your camera, so you need to understand how its resolution and size affects your images

**T**he light-sensitive chip inside your camera that creates the digital image is known as the sensor. To use your camera you don't need to know how this amazing piece of technology works, but there are some aspects of the sensor that will have an impact on your images and camera.

First there's the resolution, which is simply the number of pixels that make up the image. The main impact of this is how large you can print your images, with the higher the resolution, the larger you can print without individual pixels becoming noticeable. This involves a little bit of maths, but a commonly accepted standard for the highest quality

prints is that the image should be at least 300 dpi (dots per inch). It's possible to print at lower dpi settings, and still get good quality prints, but the 300dpi figure is the safest bet.

Most recent Nikons have a resolution of at least 14 million pixels (known as 14 megapixels). This means that you'll be able to produce a 10x15-inch print at 300dpi. 



18mm DX



28mm FX





# Master your NIKON D-SLR camera

## LENSES AND COMPOSITION

DX sensor

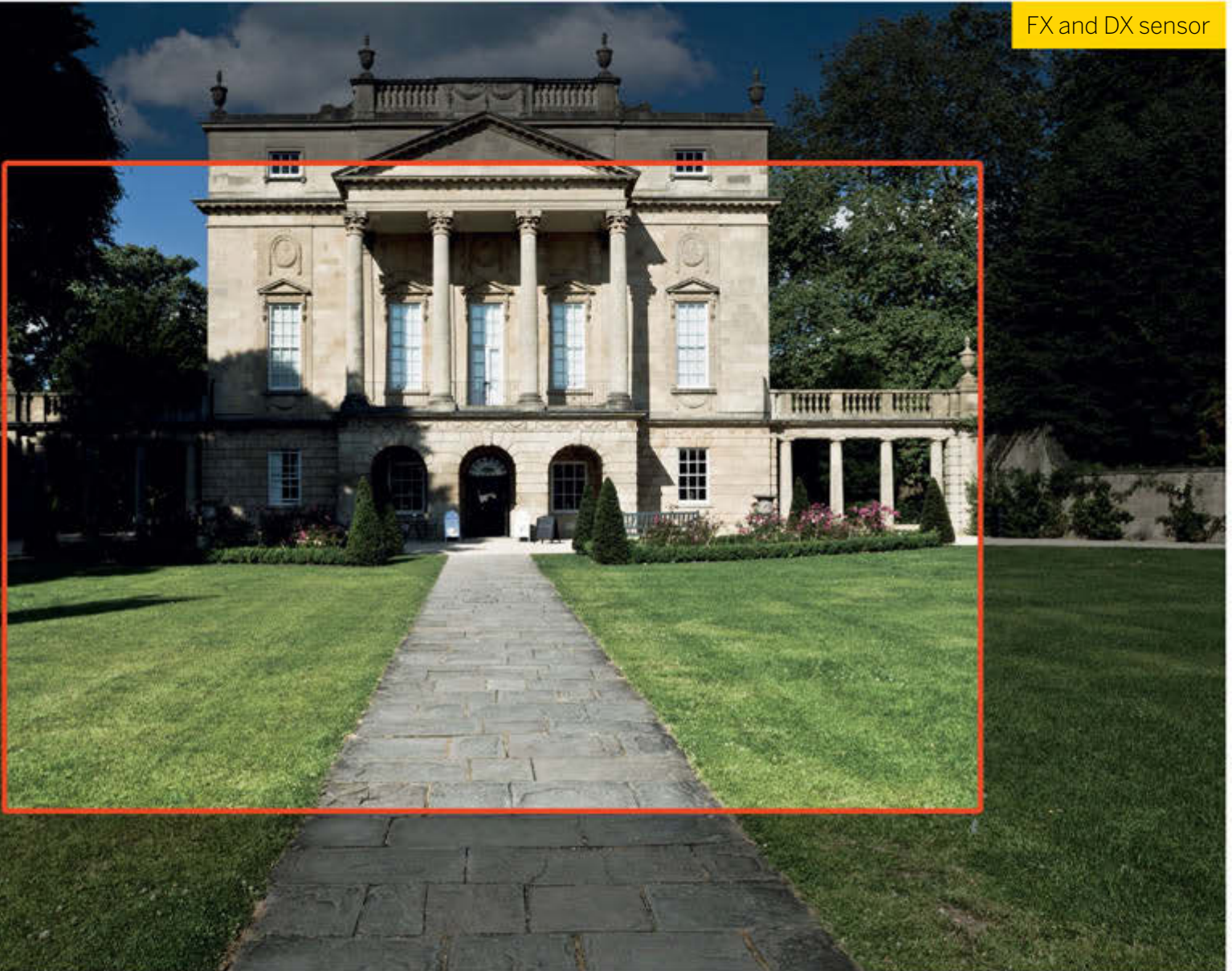


FX sensor





FX and DX sensor



The other aspect of the sensor that has an impact on your images is the physical size of the device.

Nikon SLRs feature two sizes of sensor, which are called FX and DX. But you may also see the FX sensor referred to as full-frame, and the DX sensor referred to as a crop sensor or APS-C. The FX sensor is essentially the same size as a shot taken on traditional 35mm film, which is 24x36mm. This size of sensor is mainly fitted to professional models, and the D600/D610. The DX sensor is 16x24mm, and is fitted to most of the more affordable Nikon SLRs.

This size difference has several effects, but the main one is to do with how much of the scene you can include with a particular focal length lens, known as the field of view. Using the same focal length lens, the larger FX sensor will give you a wider field of view than the smaller DX one.

So, for example, if you shoot a scene using a 28mm lens on an FX camera, and then used

the same focal length lens on a DX camera, you would get a narrower field of view. To get the same field of view on a DX camera as you would get with a 28mm lens on an FX camera, you would have to use an 18mm lens.

This effect on the field of view can also be referred to as the crop factor, which you will often see quoted in technical specifications. In the case of DX cameras, the crop factor is 1.5x, which means that you have to multiply the focal length used on a DX camera by approximately 1.5 to get the equivalent focal length on an FX camera.

If you only shoot with a DX camera, you don't really need to worry about the crop factor or the equivalent focal lengths, because the focal length quoted on the lens will give you all the information you need. You'll find that some lenses are called FX and some DX, but generally any modern FX lens will fit on a DX camera, and if the focal length is the same, it will give exactly the same field of view. ■

RESOLUTION	MAXIMUM PRINT SIZE AT 300DPI
6MP	7x10in
12MP	9x14in
16MP	11x16in
24MP	13x20in
36MP	16x24in



# Master your NIKON D-SLR camera

## ADVANCED FEATURES





# Advanced features

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# Metering modes

Get better exposures using the appropriate metering mode for a given shooting scenario

**W**hen you take a photo your D-SLR measures the light in the scene and then produces results based on how the light falls and what camera settings you or your camera has selected. Every D-SLR has a metering system to measure the light, but you don't necessarily always want to keep the metering mode on the same setting. Along with the default 3D matrix metering, there are two other main metering systems called centre-weighted and spot to help you get more accurate exposures in different lighting and shooting situations. These three metering systems differ in the areas and the way that they measure the light across the image. ▶





### 3D matrix metering

This metering mode works by measuring the light from hundreds (or thousands) of points across the entire image area. It then uses other information such as the colour and focusing distance to calculate the best exposure based on a database of exposure information inside the camera.



### Centre-weighted metering

In centre-weighted metering mode, the camera measures the brightness of the whole image, but takes around 75% of the reading from a circle in the middle of the frame. This circle is normally around 8mm wide, but on models such as the D7000 and higher you can alter the size of the circle.

### Spot metering

As the name implies, spot metering measures from a small area (or spot) instead of measuring across a large area of the frame. The size of this spot varies a little between cameras, but is approximately equivalent to the size of the focus point bracket in the viewfinder. On most models the area used to measure corresponds to the active focus point when using single-point autofocus area. If you're using the automatic autofocus area selection, the spot meter will measure from the centre of the image.





# When to use each metering mode

## 3D matrix metering

Because it takes several readings across the whole image, and also uses the distance you've focused on, 3D matrix metering is perfect for shooting most subjects.



## Centre-weighted metering

Centre-weighted metering is a much less sophisticated system compared with matrix metering. This simplicity means that it can give more consistent and reliable results. Instead of making complex calculations to adjust the exposure, like those used by the matrix metering system, in centre-weighted metering mode the camera will simply give a reading based on the overall brightness or darkness of the scene, allowing you to make adjustments to the exposure.

This relies on your understanding more about why these changes occur, and also when to adjust the exposure, though, so it's not as easy or simple to use as matrix metering. This consistency makes centre-weighted metering a great choice for shooting subjects such as sunrises or sunsets, particularly when you're using filters, because any changes in the brightness of the scene are directly translated into the exposure. Which you can then adjust for using exposure compensation or adjusting the settings in manual exposure mode.



### Spot metering

Using spot metering successfully takes a little more practice than either of the other two metering modes, because it only measures the brightness from a tiny area of the image. This means that you have to position the spot metering area over a part of the subject that you want to be captured as a midtone.

If you're using spot metering in any of the automatic modes, you need to either make sure that the meter area stays positioned over this midtone in the subject when you take the picture, or use the AE-Lock facility. Because of this, it's often easier to use manual exposure mode when using spot metering. In this mode you can position the metering area over a midtone and set your exposure. Then, as long as the lighting on the subject doesn't change, you can leave the exposure settings alone and get on with shooting. ■



# Exposure compensation

Make your image lighter or darker using the exposure compensation feature on your D-SLR

**E**xposure compensation is used to make your shots lighter or darker. You can use exposure compensation to correct the exposure for a second shot, if the first one isn't correctly exposed, but with a little practice you can also predict when you're likely to need to use it before you take a shot. The basic principle is based on whether the scene contains mostly dark or light tones.

## When to use exposure compensation

The type of exposure compensation you need to use in most shooting situations is a little counter-intuitive. If the whole image contains mostly light tones and colours, the camera will actually under-expose the image, so you'll need to set the exposure compensation to a plus value. While if the image is mostly dark, the camera will over-expose, so you'll need to set the exposure compensation to a minus value. ▶



## How exposure compensation works in each exposure mode

Changing the exposure compensation will give you more or less exposure in program, aperture-priority and shutter-priority exposure modes. It will affect different

settings in each mode to achieve these changes in the exposure. In program mode it will alter both the shutter speed and the aperture, unless it's reached the maximum

or minimum setting available in either setting. In aperture priority it will only change the shutter speed, and in shutter priority it will only change the aperture.

CAMERA SETTING	+ EXPOSURE COMPENSATION		- EXPOSURE COMPENSATION	
	APERTURE	SHUTTER SPEED	APERTURE	SHUTTER SPEED
Program mode	Wider aperture	Longer shutter speed	Narrower aperture	Shorter shutter speed
Aperture priority mode	Unchanged	Longer shutter speed	Unchanged	Shorter shutter speed
Shutter priority mode	Wider aperture	Unchanged	Narrower aperture	Unchanged

## Manual mode

In fully manual exposure mode you set both the shutter speed and the aperture yourself, so any exposure compensation won't directly affect either setting. If you set exposure compensation in manual mode, it will simply shift the suggested settings for the 'correct' exposure displayed on the exposure meter readout.

So, unless you're shooting several images that will all be in the same lighting conditions, it's not a good idea to use exposure compensation in manual mode, because it's very easy to forget that you've set it, which will affect the exposure of every shot you take.

Because you have complete control over the settings, it's much easier to simply leave the exposure compensation set to zero, and then use the exposure metering display to set values that will give more or less exposure than the meter suggests.



+1

# When to use compensation



## Snow scenes

If you're shooting a scene where snow is covering a large area of the ground, your camera will often under-expose the scene, so that the snow comes out as grey, rather than white. In this situation you need to set the exposure compensation to around +1 to increase the exposure and keep the snow bright.



## Dark backgrounds

Your camera is likely to over-expose if a large area of your scene is dark or black. In this situation you'll need to set the exposure compensation to -1 for a dark scene, or -2 if the background is almost black.



## Night scenes

The low light levels can make it difficult for the camera to get the right exposure when shooting at night. So if the subject you're shooting contains a large area of dark tones, try setting the exposure compensation to -1 or even -2 to keep these areas black.





### **Shooting into the light**

If you include a bright light source in your shot then it's likely that your camera will under-expose the main subject. To keep more detail in the subject you should try using +1 exposure compensation, or +2 for even brighter light sources.



### **Mist and fog**

Similar to shooting in snow, a scene shrouded in mist and fog will cause the camera to under-expose. Try using +1 exposure compensation in these situations.





# Drive modes explained

Match the drive mode to the subject matter for more successful photo shoots

**T**here are three normal drive modes available on most Nikon cameras: single, continuous and self-timer. These modes control how many shots the camera will take when you press the shutter release button.

## Continuous

This drive mode enables you to keep taking shots by holding down the shutter release button. This is the best mode to use when shooting moving subjects, because you don't have to lift your finger off the shutter release to take more than one shot. The speed of this continuous drive mode will vary according to the camera you're using, which is measured in the number of images you can shoot in a

second. This ranges from 3 frames per second (fps) on models such as the D3100, to a massive 11 fps for the D4.

## The limitations of continuous shooting

Even though you can in theory shoot at very high speed in this mode, there are a couple of things that can affect the frame rate of your camera. The first is the shutter speed. To achieve the maximum frame rate you'll need to use a fast shutter speed such as 1/250 sec or faster. At slower shutter speeds the frame rate will be reduced.

The second limitation is when you're shooting at the highest resolution and quality settings. This doesn't directly affect the frame

rate, but the number of shots that you can shoot in any sequence may be limited by the ability of the camera to process and write the data to your memory card. This is often referred to as the buffer or buffer capacity of the camera. Using the JPEG file format, most cameras will shoot at least 20 frames before you'll notice that the camera will no longer shoot at the highest frame rate. This limitation is more noticeable if you shoot raw files, though, with models such as the D3100 having the ability to shoot around 10 raw images. Once this number has been reached, the camera will shoot at much slower speeds, until finally you may even have to stop shooting to allow the camera to clear its memory buffer before carrying on shooting.



Static subjects such as landscapes are best taken in single-shot drive mode



### High speed and low speed options

On many Nikon models you can choose between a high-speed drive mode (C-H), which shoots at the maximum frame rate available on the camera, and a lower-speed drive mode (C-L). This is useful if you need the convenience of the continuous drive mode, but you don't need to use the fastest frame rates available. It can also help you to avoid filling up the buffer of the camera.

### Single shot

In this mode the camera will take one shot when you press the shutter

release button. To be able to take another shot you have to take your finger off the shutter release, and press it down again. This process means that it's more suited to static subjects where you have time to shoot individual images, rather than a fast-moving subject. Using single rather than continuous drive mode can help you avoid taking multiple shots of the same subject when it isn't necessary.

### Self-timer

In this drive mode there's a delay between pressing the shutter release button and the camera taking a picture. On most Nikon models you can

Use the continuous drive mode for fast-moving subjects to ensure you get the shot you want







choose different self-timer delay times. The two most common are a short delay, such as 2 or 5 seconds, and a longer 10-second delay. The shorter delays aren't usually long enough for you to get into the shot yourself, so they are most useful for reducing the risk of moving the camera when it's on a tripod (but not using a remote release). While the longer delays are better for taking self-portraits or group shots where you want to get in the shot yourself. If your camera offers the option of changing the delay time, you'll find the options in the Timers/AE-Lock screen in the Set-up menu.

### Set the drive mode

The way you access the drive mode will depend on which type of camera

body you have. On most DX cameras such as the D3000- and D5000-series, you change the drive mode by pressing the drive mode button and using the command dial to scroll through the options. While on models such as the D7000 and above there's a dial on the left of the top plate to select the drive mode.

### Other drive mode options

Along with the three main drive mode settings available on every model, some Nikon SLRs have some additional options.

### Remote

If there's a dedicated wireless remote control available for your camera, you'll need to select this mode to allow

you to fire the camera with this remote. You shouldn't use this setting if you're using a wired or cord remote release attached to the camera, though. With a wired remote you simply use the standard drive modes such as single, continuous or self-timer.

### Quiet mode

The action of the mirror moving and the shutter opening and closing means that taking pictures can be fairly noisy in the normal shooting modes. This isn't normally a problem, but it can be noticeable if you're taking shots in a quiet environment such as a church during a ceremony or if you're shooting particularly timid wildlife.

Many recent Nikon models have a quiet mode to help reduce this noise, which uses a combination of delaying the mirror moving back into position after the shot has been taken and turning off any audible beeps on the camera. While this mode can make the camera a little quieter, it does mean that there's a slight delay between taking shots, so depending on the subject, quiet mode may not be worth the sacrifice of potentially losing shots.

### Mirror lock-up

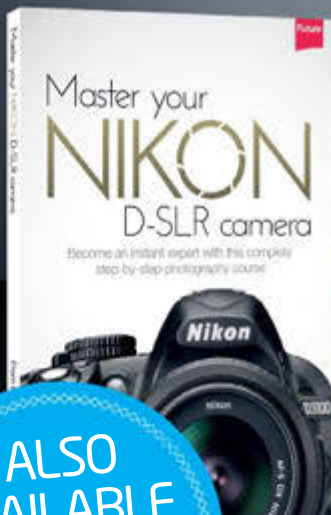
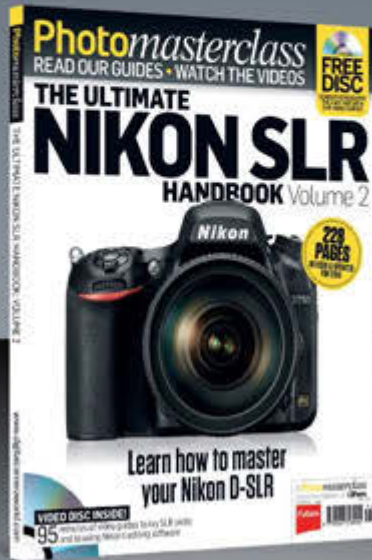
This drive mode is only available on more expensive models, and is a way of reducing the movement caused by the mirror moving before you take a shot. This is only really useful when you're shooting on a tripod and using a remote release, and you have to press the release button on the remote once to activate the mirror movement, and then again to take the shot. ■



If your remote release is a dedicated version, look for the appropriate drive mode in the menus

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# Master your NIKON D-SLR camera

## ADVANCED FEATURES



# White balance explained

Find out how to adjust the white balance to remove undesirable colour casts from your photos in any lighting conditions

**W**hite balance is a system used for changing the colour of an image to suit the different types of lighting you encounter in different shooting situations. It's based on the fact that the colour of light will vary, from very warm light from direct sun early or late in the day, and light from normal domestic light bulbs, to the much cooler light created from the midday sun or open shade.

## White balance settings

There are several settings available to help you get neutral colours in all the most common types of lighting. These include an automatic setting, along with several presets designed for common light sources such as daylight, incandescent and flash. There's also the option of setting a custom preset for coping with more demanding lighting conditions, and on some models you can also set a specific colour temperature.

## Auto

In this mode the camera will measure the colour of the scene, and set a white

balance that will produce a neutral result. This is the best option if you don't have time to select one of the other white balance settings, the lighting conditions are changing, or you're shooting in mixed lighting. Like any automatic setting, the auto white balance works well in many lighting conditions, but there are times when it can give incorrect results.

## Preset options

There are times when the automatic setting can be fooled into setting the wrong white balance, particularly if there's a single dominant colour in the scene, or the lighting on the background is different to the light on your main subject. So there's also a selection of preset white balance settings to suit the most common lighting you'll find.

Remember that these preset options apply to the light falling on the subject, rather than the background or surroundings. So, if your main subject is in shade, but the background is in direct sunlight, you should choose shade white balance to keep the subject the correct colour.

PRESET	COLOUR TEMPERATURE
Shade	7000K
Cloudy	6000K
Flash	5600K
Direct sunlight	5200K
Fluorescent	4000K
Incandescent	3200K

The auto setting does a reasonable job of assessing colour temperature most of the time


## Colour temperature

The colour of the light from different light sources is measured in a scale known as the colour temperature. This gives a numeric value to how blue (cold) or red (warm) the light is. This scale of temperatures is measured in degrees Kelvin, with lower numbers, such as 3500K, indicating a warm, red light, while the higher the number the cooler (more blue) the light appears.

The table above shows typical colour temperatures of the most common white balance preset options.

## Manual preset

In some lighting situations you may find that none of the standard preset values or the automatic white balance quite matches the colour temperature of the light source you're using. But there's a final option in the white balance settings that allows you to achieve a precise white balance in-camera, called the Manual Preset white balance.

To use this custom white balance you need to shoot a piece of white or grey card or paper, which is illuminated by the same light source as your subject, and then use this image to measure the white balance. Then, as long as the lighting doesn't change, you'll get accurate colours. 







In this image the lighting is different on the foreground and background, creating white balance problems



# When to use the preset white balance settings

Discover the situations in which you would want to change the white balance setting from automatic to a preset

## Dominant coloured subject or background

If there's a strong, single colour that covers a large area of the image, it can fool the automatic white balance. The auto setting can try to neutralise this colour, giving the wrong setting for the main subject.

## Lighting different on foreground and background

Similar to a dominant colour, if the lighting on the background is a different colour temperature to the light on the foreground, the automatic white balance may fail.

## Night urban shots

The mixture of colours from artificial lights on most city streets can make

it difficult for the automatic white balance to get the correct colour balance, so try setting incandescent for more consistent results.

## Using the 'wrong' white balance for creative effects

Even though you'd normally want to set the white balance to match the colour temperature of the light to get accurate colours, you can also use the white balance to create colour casts for creative effect.

## Sunlight early and late in the day

The most common time you'll use the wrong white balance is when you're shooting in early morning or late evening sunlight. One of the main

reasons for shooting at these times is to capture warmer colours, but if you use the correct white balance (around 3000K) or incandescent, the result will look too neutral. To retain the warmer colours try using the daylight or sunny preset white balance (or around 5000K).

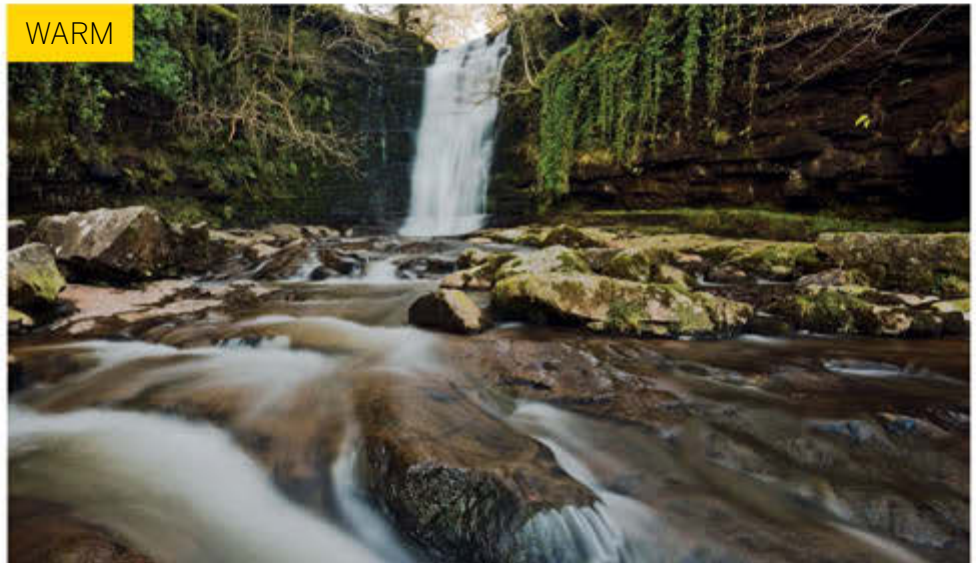
## Cooler colours

By choosing a white balance for a light source with a higher colour temperature than the lighting on the subject you'll get a cooler, more blue, tone to your image.

## Warmer colours

By selecting a white balance setting designed for a light source with a lower colour temperature than the actual lighting, you'll get warmer colours. ■





### STEP BY STEP

## How to change the white balance



### Most Nikon SLRs

The easiest way to select the white balance on most Nikons is to press the I or Info button to access the settings on the rear LCD information screen. Then use the multi-controller to highlight the white balance icon. Then press OK, and choose the setting.



### D7000 and above

These models have a white balance button, situated either on the back of the camera or on the left of the top plate. To change the white balance you simply press and hold this button and scroll through the settings using the command dial.



ADVANCED FEATURES

FILL-IN FLASH



NO FILL-IN FLASH

# Take better photos with fill-in flash

Enhance your portraits by eliminating harsh shadows using your D-SLR's built-in flash

**M**ost Nikon SLRs have a pop-up flash that can either be activated automatically by the camera in the fully automatic mode, or by pressing the small flash button just below the flash unit itself.

This built-in flash isn't really the best main light source, because the flash is very close to the lens, so the results can look quite flat, with obvious shadows behind the subject. But this small flash unit is a good way to get shots that would otherwise be impossible in low light, and for adding a little light to portraits in bright, sunny conditions.

## Flash modes

The range of flash modes available will depend on the exposure mode you're using. In the fully automatic 'green' mode the flash will normally fire automatically, although you can turn the flash off. In the Scene modes you have very little control, because the camera will decide whether the flash is used. In the more creative modes

such as P, A, S or M you'll normally have to manually activate the flash. Then you have the choice of different flash modes. Here are the most common ones...

## Fill-flash

Indicated by just the lightning (flash) symbol, this is the default setting in most exposure modes, and when you activate the flash the camera will try to balance the exposure of the normal light with the exposure from the flash.

## Slow-sync

This mode allows you to combine flash with longer shutter speeds than would normally be used. This will allow you to capture the background in poor lighting conditions, or include motion blur on moving subjects. It's best to use shutter-priority or manual exposure modes for full control over the shutter speed.

## Red-eye reduction


In this mode, indicated by an eye symbol, the lamp or pre-flash will



Activate the flash using the button marked by a lightning symbol

fire before the main exposure to reduce the effect of red-eye in flash shots.

## Rear-curtain sync

Normally, the flash fires at the beginning of the exposure, but in this mode the flash fires just before the shutter closes. This is primarily used when shooting moving subjects, and using long shutter speeds, because it produces a more realistic motion-blur effect than the normal mode. 



## Flash coverage

Using built-in flash is easy, but there are a couple of things you need to watch out for. The first is if you get close to the subject, particularly using the wider end of your standard zoom, there's a danger that the shadow of the lens can become visible in your shot. This is due to the flash being so close to the lens, so you need to shoot from further away with a longer focal length. The second problem is if you're using a wider lens than the standard zoom. As well as the shadow from the lens becoming a problem, the light from the built-in flash also may not reach the edges of the frame.



# Extra flash settings

## Fastest shutter speed

One of the main things you need to bear in mind when using flash in exposure modes such as shutter priority and manual is the shutter speed. Because of the way that the flash and shutter work, you can't use very fast shutter speeds with flash. On most Nikons the fastest shutter speed (known as the maximum sync speed) in the normal flash modes is 1/200 sec or 1/250 sec. If you're using the built-in flash the camera will prevent you selecting a shutter speed faster than this, but you can use slower shutter speeds. This needs to be done with care, though, because if you go slower than around 1/30 sec you run the risk of there being some blur due to camera or subject movement visible, along with the sharp image from the flash exposure.

## Flash exposure compensation

In most situations you can use the standard automatic TTL exposure metering to work out the flash exposure, but just like shooting without flash, there are times when you may want to reduce or increase the exposure. This is accessed in two main ways according to whether your camera has a single command dial or two dials.

## One command dial

On most models with a single command dial, once the flash is activated you need to hold down

the flash button and the +/- button simultaneously, and then turn the command dial to alter the flash compensation.

## Two command dials

Accessing the flash exposure compensation on cameras with two dials is slightly easier than single-dial models. With the flash activated, you press and hold the flash button, and then, in the default setting, you use the front command dial to access the flash exposure compensation.

## Via the rear information screen

On some models with a rear information screen, you can also access the flash exposure compensation by pressing the I or Info button, then use the multi-controller to highlight the flash exposure compensation setting. Then you press OK, and use the top and bottom parts of the multi-controller to adjust the compensation.

## External flashguns

While the built-in flash is useful for basic lighting, it does have some limitations. It's not very powerful, so it won't be able to light up large spaces or distant subjects, and because it's

positioned very close to the lens, it can produce unflattering shadows and lighting, particularly if it's used as the main light source.

Using an external flashgun can help you to overcome these limitations, but the different features and models can make it difficult to know what to look for. So, here's what you should look for when buying an extra flashgun.

## Power

A separate flash will usually produce more light than the one built into the camera, allowing you to light subjects further away from the camera.

## Compatibility

To use the flash with many of the automatic features of your camera, they need to be able to 'speak' to each other. This is often called a Nikon dedicated (or compatible) flash, so if you want to use the automatic exposure modes with your flash you need to make sure that it's fully compatible with your camera.

## Moveable flash head

Many flashguns allow you to tilt or swivel the head, so you can point the flash away from the subject. To use this facility you need a surface such as a wall or a ceiling for the light from the flash to bounce back on the subject. ■



External flashguns open up a host of creative options







# Master your NIKON D-SLR camera

## ADVANCED FEATURES

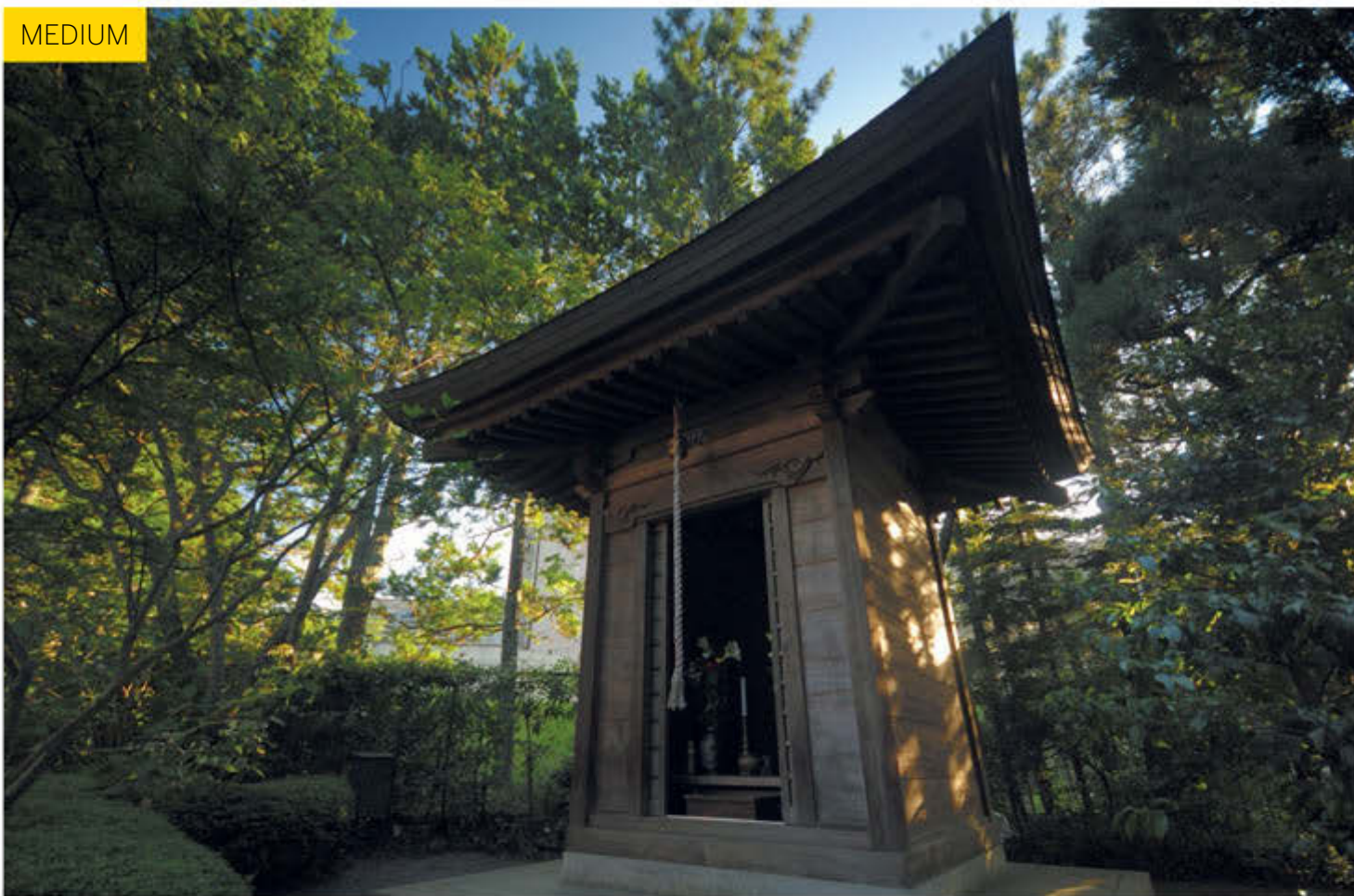
EXTRA HIGH



HIGH



MEDIUM



LOW



OFF





# Active D-Lighting

Get more detail in the highlights and shadows using your Nikon's Active D-Lighting feature

**T**here are many lighting conditions when it's impossible to keep detail in the brightest highlights and the darkest shadows using the standard shooting modes. To help you get better results from these high-contrast subjects, many Nikon SLRs have a feature called Active D-Lighting. This is accessed either via the shooting menu or by using the rear information screen, depending on which model you're using. Like many features, Active D-Lighting isn't available in every exposure mode, particularly the scene and fully automatic modes. So if you find that it's greyed out in the menu or information screen, check which exposure mode you're using, and change to program, aperture-priority, shutter-priority or manual.

## What is Active D-Lighting?

Active D-Lighting adjusts the contrast in the image to help increase the shadow and highlight detail in your images, which is particularly useful when shooting high-contrast subjects.

There are different strength settings available when using Active D-Lighting, which can be selected when you access the D-Lighting menu. These range from a low setting, which applies a small amount of contrast adjustment, to a high (or even extra high) amount, which should only be used in extremely high-contrast lighting.

## When to use Active D-Lighting

Active D-Lighting can help give more shadow and highlight detail in your images, but in lower contrast lighting conditions the processing can reduce the contrast of your image too much, giving a flat, dull image. So, remember that like any effect it's not something you want to leave on all the time.

Like most in-camera processing, any Active D-Lighting you apply will only permanently affect JPEG images. If you shot in raw format, the D-Lighting is only activated if you open the image in Nikon's own raw converter software, but you can choose to apply it or not to your final conversion.

## STEP BY STEP

### Using Active D-Lighting



#### 1 How to set Active D-Lighting

There are two ways of accessing the Active D-Lighting settings depending on the camera model. All models with this feature will give you access through the shooting menu, while you can access it directly from the rear information screen on many of the recent models.



#### 2 Menu setting

If your camera has Active D-Lighting it can be accessed from the shooting menu screen, under Active D-Lighting. With this setting highlighted, press OK or the right section of the multi-controller. Now you're able to access the different strength settings available.



#### 3 Information screen setting

On many recent models you can access Active D-Lighting directly from the information screen. Press the I or Info button to activate the settings icons, then use the multi-controller to navigate to the ADL icon. Then press OK, and you can then choose from the different strength settings.



# In-camera HDR

Discover how in-camera HDR can help you get better results in high-contrast lighting

**I**n addition to Active D-Lighting, many Nikon SLRs have another way to retain detail in high-contrast images. This setting is known as high dynamic range (HDR) imaging, and can potentially give more detail in the highlight and shadow areas than D-Lighting.

As with D-Lighting, the HDR option is only available in the 'creative' exposure modes, but unlike D-Lighting, HDR is only available when shooting JPEG images, not raw, so if the option is greyed out in the menu or information screen, you need to check both the exposure mode and the file format to allow you to use the HDR feature.

## What is HDR?

Unlike the D-Lighting feature, which uses the information captured in a single image to try to capture more highlight and shadow detail, in HDR mode the camera takes two images using different exposure settings. These images are then merged together to give even more detail than D-Lighting is often capable of capturing.

Just like using D-Lighting, there are several strengths available in HDR, to help cope with subjects with different brightness ranges. There's also an automatic setting, where the camera will analyse the scene and try to select a strength setting to give the best results.

## When to use HDR

Like many digital effects, using HDR can be a little addictive, because it can help to give your images a punchier, more striking appearance. But this effect is easily overdone, and doesn't suit every subject. Using HDR with portraits needs to be done with extreme care, too, because the skin tones are often not very flattering.

MEDIUM



EXTRA HIGH



HIGH









# Customise your Nikon D-SLR

Discover how to customise the features and buttons on your Nikon camera

**Y**ou may be happy with the way the buttons, dials and displays of your Nikon are set up, but there are some controls and functions that you can customise to suit your own preference or simply give faster access to features you use.

The amount of customisation available varies between different models, with more options available on the more expensive, professional models, but even the cheapest models offer some useful custom features.

On most models, apart from the D3000 series, you'll find most of these settings in the Custom Settings menu. On models without this Custom Settings menu, you'll find most settings in the Setup menu.

Here are some of the most useful features you can change to customise your camera.



## Viewfinder grid display

On the D5000 series and higher you have the option of displaying a grid in the viewfinder. This can help you keep your subject straight, and also help when positioning subjects in the viewfinder.



## Fn button

Along with all of the standard, pre-assigned buttons, many models have a function (Fn) button you can customise. The range of features that can be assigned to this button varies with different models, but most models allow you to choose from the image quality and size, ISO, white balance and often Active D-Lighting.





### EV steps

This allows you to choose whether the shutter speed, aperture and ISO values change in 1/3 or 1/2 stop increments. The default setting on most Nikons is 1/3 stop, which is perfect for getting the most accurate settings, but changing this to 1/2 stops can make it quicker and easier to scroll through values because there are fewer values between a low and high setting.

### File number sequence

This feature may not seem important, but it can help you find shots, particularly if you shoot a lot of images. The default off setting means that the camera will start the numbering sequence of images from the lowest available on your card. So, if you format the card every time you download your shots, or you have two formatted cards, it will start the file numbering from one on each card, which can lead to lots of images with the same file number. Setting the file number sequence to on means that the camera will 'remember' the number of the last shot you took, and restart the number sequence from this value. So, if you replace one card with another, the file numbers will run in sequence, making it easier to identify different images later.



### Timers and displays

In this menu you can alter how long the displays such as the metering display and monitor functions on the camera stay active when you haven't touched any of the controls.



### Extra custom features

On cameras such as the D7000 and higher, the range of custom controls is much more comprehensive. In addition to many more options available for the Fn button, you can assign a range of features to the preview button on the front of the camera. Some models also have one or more user-defined settings that can be saved as a new exposure mode. These user modes can save the exposure mode, metering, autofocus mode and more to make it easier and quicker to have the camera set up for specific shooting situations.



# Picture Controls

Learn how you can give your shots more impact straight out of the camera using Picture Controls

**U**nlike the scene modes, the Picture Control option doesn't affect the camera settings such as aperture or shutter speed. What they do alter is the in-camera processing of your images, such as saturation, sharpening and contrast. They are useful for giving your shots more impact straight out of the camera, without having to adjust them on your computer.

Like many in-camera processing options, Picture Controls will only be permanently applied to JPEG files. If you're shooting raw images, the Picture Control settings will only be applied if you open the raw file in Nikon's raw software, and will be ignored by any other raw software such as Elements or Lightroom. In Nikon's View NX and Capture NX, the Picture Control settings can be altered when you open the raw file. 📌





## The six Picture Control presets

The exact settings used by different cameras aren't precisely the same, but there are six options that are designed to give similar-looking results for any camera with Picture Controls



### Standard

As the name suggests, the standard Picture Control option uses settings that will suit the majority of subjects and shooting situations, without adding too much saturation or sharpening.



### Neutral

The neutral option uses settings that apply very little sharpening, saturation or added contrast to your images. This means that they can look a little flat and dull compared to the other settings, but it makes it a good option if you're planning on using more extreme adjustments to your images later on.



### Vivid

This option uses higher saturation and contrast settings than the Standard option. So it's perfect for producing colourful, punchy results straight out of the camera. But it's not as good for images that you want to adjust later on.



### Monochrome

This Picture Control produces black-and-white images, but you can also apply various toning effects such as sepia and blue, or even apply effects that add or remove contrast by using coloured filters.



### Portrait

This uses settings similar to the Neutral option, so the overall saturation and contrast are kept quite low, but it's designed to give a little more vibrancy to the skin tones than neutral to enhance portrait images.



### Landscape

The Landscape option uses settings somewhere between Standard and Vivid, to make landscapes or other scenic images appear more saturated than Standard, but more natural than Vivid.





## Customising Picture Controls

Along with the preset options you can also set up your own custom settings to suit the type of images that you like. This is usually done using one of the preset settings as a starting point, and then using the controls available to adjust the settings

### Quick adjust

This adjustment is available in each Picture Control except Neutral and Monochrome, and allows you to increase or decrease groups of settings in each preset, rather than altering the individual adjustments. So, for example, if you want to use portrait Picture Control, but want a punchier look, you can simply set the quick adjust to +1 or +2.

### Individual adjustments

This screen gives you complete control over all of the adjustments available in each Picture Control setting, such as sharpening, contrast and brightness. In the colour modes you can also alter the saturation and hue, while in the Monochrome setting you have controls for filter effects, toning and saturation instead.

### Contrast

You can increase the contrast to make low-contrast subjects look better, or lower it to help retain shadow and highlight detail in high-contrast subjects. Using a higher contrast value can mean that you lose highlight and/or shadow detail.

### Sharpening

This alters the amount of sharpening applied to your images. While images may look sharper with more sharpening applied, this can make it more difficult to apply many adjustments or enhancements once you've downloaded your images without increasing noise and other image degradation.

### Brightness

Using this adjustment you can choose between -1, which will reduce the brightness and also increase the contrast in the shadow areas, or +1, which will increase the brightness and increase the contrast in the highlight areas.

COLOUR



B&amp;W DEFAULT



BLUE FILTER



GREEN FILTER



RED FILTER



YELLOW FILTER



## Colour and Monochrome settings

### Saturation

Increasing the saturation will make your images look punchier and more colourful, but you need to watch out for over-saturation, where the colours lose detail, especially when shooting colourful subjects.

### Hue

This changes the colours in your images, with a minus value increasing the reds and a plus value increases the yellows.

### Toning

Here you can choose to add a tone effect to your monochrome images, similar to the traditional effect of toning photographic paper. You can choose between nine different colours, including classic sepia and cyanotype effects.

### Toning saturation

This setting adjusts how intense the colour of any toning effect is in seven levels, from the subtle tones at the lower end of the scale, to a more intense effect at the higher end.



### Grid display

Pressing the plus magnifying glass button when you're in the Picture Control menu brings up a grid display of the settings used for each preset Picture Control. This gives a quick, visual display of the contrast and saturation values used in each preset.



# Master your NIKON D-SLR camera

## THE PHOTOGRAPHER'S APPRENTICE





# The photographer's apprentice

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### THE PRO...

**NAME** Richard Peters

**CAMERA** Nikon D4 & D800

■ Richard is a multi-award-winning wildlife photographer who has regularly contributed to *N-Photo* since its launch. Like many professional shooters nowadays he combines his photography work with a second job creating graphics for a TV station in order to pay the bills. You can read his excellent blog and see his stunning pictures at [www.richardpeters.co.uk](http://www.richardpeters.co.uk).





# Capture amazing wildlife images

Wildlife professional Richard Peters and our adventurous apprentice head to a country park to stalk wild animals



## THE APPRENTICE...

**NAME** Leigh Gregory

**CAMERA** Nikon D700

■ Leigh is an electronic security expert from Swindon, and got his first Nikon D-SLR in 2005 in order to take great pictures of wakeboarding and mountain biking. He is now on his seventh Nikon, a full-frame D700, and wrote to ask us for help shooting deer in the parklands near his home. 📸





EXPOSURE 1/200 sec, f/4, ISO1600  
LENS Sigma 300mm f/2.8 EX DG HSM

## THE PRO'S KILLER KIT #01 NIKON TC-14E TELECONVERTER

**Richard says...** Nikon makes three different strengths of teleconverters, and I own all three. The most powerful is the 2x TC-20E doubler, but as this cuts the maximum aperture of the lens by two stops it needs lots of light to be worth using, and slows down the autofocus noticeably. The 1.7x TC-17E has ended up being a bit of a paperweight, as it doesn't give enough of a magnification gain over the 1.4x converter. It's this TC-14E (£310/\$499) that is the one that I use most often – fitting on my Nikkor 600mm f/4 to turn it into a monster 840mm f/5.6 super telephoto.



## OUR APPRENTICE SAYS...



“ We arrived at the entrance to the park before dawn, so we could be first in when they opened the gate, and then drove until we found the deer and parked up in the nearest car park. Although the light was not bright, Richard showed me how to use Auto ISO and let the camera boost the brightness of the image so that I could still use a suitable fast shutter speed and a wide aperture. This was one of the first shots that I took, and I love the classic pose – and the tuft of grass hanging from the stag's antlers. ”

### ▶ Three legs or two

Although Richard owns a monopod he rarely uses it, and prefers either to handhold his long lenses, or to use his Gitzo tripod fitted with a Wimberley gimbal head.



HOT  
SHOT  
#01

## EXPERT INSIGHT

■ **Richard says...** It is easy to get despondent as a wildlife photographer. You see prize-winning shots and wonder why yours are not as good when you take pictures of the same species in the same location. What you don't know is how many times the photographer had to go there to get the shot. I came to Richmond Park last year five times during the rut and failed to get the shots I wanted. Often it can take a dozen or more visits to get what you want! This shot by Leigh of a braying stag is fantastic, but let down as there is no mist or rain to make the background interesting, and you can't see the beast's breath as it was not cold enough. But the fact this is not the perfect shot is the perfect reason to go back another day.



“ I came last year to Richmond Park five times during the rut and failed to get the shots I wanted. Often it can take a dozen or more visits to get what you want ”

◀ **Set subject**

Richard checks over Leigh's settings, making sure his Nikon is set up to capture the stags as soon as a photographic opportunity arose – deer won't hang around while you check your ISO and shutter speed.

## TECHNIQUE ASSESSMENT

Is Leigh kitted out for his day as a deer stalker? As they set up camp near the herds of red deer around Richmond Park's Pen Ponds, Richard suggested the following camera settings to help ensure that Leigh would have more chance of capturing sharp shots of any antler action...

**A manual & auto mix**

**Richard says...** Leigh was using aperture-priority mode, but I told him to use manual mode, and also to set Auto ISO. This way you set the precise aperture and shutter speed you want, but the exposure is handled for you by the camera adjusting the ISO to the current lighting conditions. You can then fine-tune the brightness to suit your subject by using exposure compensation.

**Back button focus**

**Richard says...** I set Leigh's camera to 'back button focus' as it has an AF On button. This lets you set and lock focus with this, rather than with the shutter release. Ensure you have access 51 AF points, but pick one of these using the Single-area AF mode – this works well for most subjects, although I'd use nine-point dynamic area AF for birds in flight.

**Fast drive**

**Richard says...** For my last little tweaks to Leigh's set-up I ensured he had his battery-grip-boosted D700's drive mode set to its fastest eight-frames-per-second Continuous High or CH mode. I also thought he would be better off using Matrix metering rather than centre-weighted.



## THE PRO'S KIT BAG

For the wildlife photographer, big is best, so Richard relies on two long telephotos. His 600mm f/4 is his main lens, but he uses his lighter 200-400mm f/4 if he goes on walkabout. His full range of optics for his Nikon D4 and D800 full-frame cameras is:

- Nikon 600mm f/4G VR ■ Nikon 200-400mm f/4G VR ■ Nikon TC-14E II ■ Nikon TC-17E II
- Nikon TC-20E III ■ Nikon 70-200mm f/2.8G VR
- Nikon 50mm f/1.4G ■ Nikon 28-70mm f/2.8D
- Sigma 150mm f/2.8 EX DG OS Macro ▶





### THE PRO'S KILLER KIT #02 LENSCOAT CAMO COVERS

**Richard says...** I use these slip-on neoprene covers for a lot of my gear. They are made to fit specific lenses and tripods, and there's a choice of camouflage patterns. A set of covers for my Nikon 200-400mm costs around £75/\$100 ([www.lenscoat.com](http://www.lenscoat.com)). It is not so much about disguising gear, but about protecting it from knocks and preserving its resale value...



#### ► Silhouette

As the sun rose there was a brief period of colour in the sky, allowing just enough time for Leigh to fire off a sequence of backlit silhouettes of a solitary stag on the top of a ridge.

#### ▼ Auto metering in M

Richard explains how to use a combination of Manual exposure with Auto ISO to give you full control of both aperture and shutter speed.



### OUR APPRENTICE SAYS...



“ We had spent some time shooting the deer in the open grassland in the Park, and now headed to the woods in search of the iconic shot of a stag standing deep in the ferns. I love

the differential focus in this shot, with the f/4 aperture and long focal length combining so that the only sharp part of the shot is the stag – ensuring that he is quite literally the focus of attention. Even with the 300mm lens I'd borrowed for the day from *N-Photo*, the animal is quite small in the frame, but this means that you get a great sense of this Red Deer's environment. ”



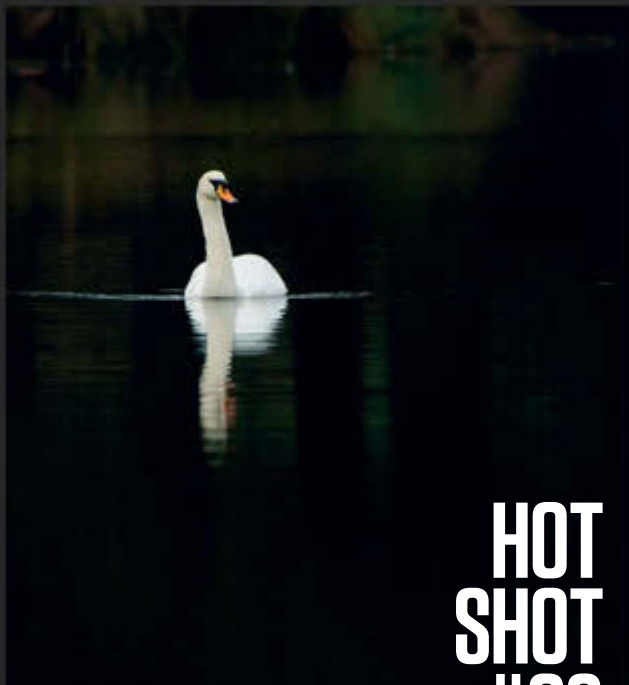


A photograph of a deer with antlers in a forest. The deer is positioned in the lower right quadrant, looking directly at the camera. It has a reddish-brown coat and prominent antlers. The foreground is filled with lush green ferns. The background is a dense forest with green foliage and tree branches, some of which are out of focus. The overall lighting is soft and natural.

# HOT SHOT #02

EXPOSURE 1/320 sec, f/4, ISO560  
LENS Sigma 300mm f/2.8 EX DG HSM





EXPOSURE 1/200 sec, f/5.6, ISO450  
LENS Nikon 200-400mm f/4G VR

### HOT SHOT #03

#### OUR APPRENTICE SAYS...



“ The Pen Ponds in the centre of the Park provided a chance for me to chance to shoot different types of wildlife – and to learn more great tips from Richard. There were lots of swans to photograph, but he advised me to concentrate on the ones that were in

the darker, shaded part of the lake, as this would make a more striking background. My first attempts made the water too light, with too much detail, and Richard encouraged me to decrease the brightness of the shot using the exposure compensation until he was happy with the look of the picture. In the end I had dialled in -3 EV, or three stops, of compensation. ”



#### ▲ For the loan of a lens

Richard lends Leigh his trusty Nikkor 200-400mm f/4; it costs £4899/\$6749 but you could hire one to try for a weekend.

#### PRO KILLER KIT #03 NIKON WT-5A WIRELESS TRANSMITTER

Richard says... This is a Wi-Fi connector for the D4, used by sports pros to send pictures back to a picture editor as they shoot, or to allow wireless tethering in a studio. I mainly use it in the field as a remote control for my D4, controlling it with the iPhone. It means I can set up a camera in a position and use the mobile to take the picture, review the image and alter settings. It is a great way of getting closer to some types of wildlife. As I inevitably already have the phone in my pocket, and as the WT-5A (£499/\$560) is so small, I can pack it wherever I go..



#### ▲ The real lowdown

Getting your camera as low as possible gives you the best angle for shooting birds on the ground or on the water. Leigh puts this compositional trick to the test by lying down in the mud next to the Richmond Park lake.

#### ◀ Hide & seek

The grasses at the edge of the water create a natural hide and great camouflage for getting that bit closer to the swans and other wildfowl that visit the ponds. ▶



## OUR APPRENTICE SAYS...



“ There were several coots bobbing on the pond, but although it was possible to get two or more in a frame, Richard got me to concentrate on getting one at a time for a simpler, stronger composition. He also told me to get down as low as possible, so that I was at the bird's eye level, and this approach really pays off in this shot. Another good tip I learned was to take five or more shots at a time, as one of the sequence will always be a little bit sharper than all the others. ”



# HOT SHOT #04

**EXPOSURE** 1/1250 sec, f/4, ISO500  
**LENS** Sigma 300mm f/2.8 EX DG HSM



Master your **NIKON** D-SLR camera

THE PHOTOGRAPHER'S APPRENTICE



EXPOSURE 1/50 sec, f/4, ISO200  
LENS Nikon 200-400mm f/4G VR

SHOT  
OF THE  
DAY!

## THE FINAL ASSESSMENT...

■ After our dawn start and our long morning's trail stalking the fawns and fauna of Richmond's royal park it was time to retire to the pub to assess exactly how much Leigh had learned. As Richard scrutinised his Apprentice's efforts he picked out his Hotshots, and judged this panned shot of a doe as his overall Shot of the Day.

## OUR APPRENTICE SAYS...



“ I had hoped to get shots of rutting deer, but although we saw some minor skirmishes between junior males, and got some shots of stags bellowing, it was obviously still too early for the deer to be showing any really aggressive behaviour. But this didn't mean I missed out on action shots. Richard got me to practise panning shots of deer as they scampered away from their groups. Of all of these shots, this one of a solitary doe was by far the most successful. I tried to follow the movement with Richard's big 200-400mm zoom as closely as I could, and the slow 1/50 sec shutter speed has ensured that the surrounding grass and bracken is beautifully blurred. ”

## OUR PRO'S VERDICT



“ Leigh got some great-looking shots during our day in Richmond-upon-Thames, but this one is by far my favourite. It just proves you can get great pictures even if you don't see exactly what you are hoping for, and even if the weather conditions are not perfect. One thing I did notice when reviewing his shots is that Leigh has a habit of composing too many shots with the subject in the centre of the frame. It is quite hard to avoid this without a lot of practice, as we all tend to gravitate to using the centre AF point – but it is worth the effort to improve your in-camera framing. A further thing that Leigh should work on is to move in closer earlier. You can take a couple of shots from a safe distance, but unless the shot is absolutely fantastic, it is worth trying to get nearer to the animal sooner rather than later in order to get a tighter and stronger composition. ”





### THE PRO...

**NAME** Jayne Odell  
**CAMERA** D800

■ Jayne's passion for photography was ignited by a trip to the Lake District. She started out with a Nikon Coolpix and progressed to the D200, D700 and now the D800. Seascapes have always been her favourite genre. Her day job as creative director at a graphic design company gives her an almost obsessive attention to detail! She was awarded an ARPS Distinction in Visual Arts from the Royal Photographic Society in 2011, and has been building her portfolio ever since. She's at her happiest capturing the emotion of the waves. You can see her work at [jayneodellphotography.co.uk](http://jayneodellphotography.co.uk).

### THE APPRENTICE...

**NAME** Sarah Scott  
**CAMERA** D3100

■ Sarah can remember taking a great shot of the Eiffel Tower at sunrise on a school trip to Paris and has been hooked ever since. Having owned a range of point-and-shoot cameras over the years, she's often thought about taking up photography more seriously, and two years ago her parents gave her a D3100 for her birthday, telling her that she now had no excuses! She booked herself onto a 'Get to Know your D-SLR' course at her local college and went from there. As a native of Margate in the UK she loves to capture the dramatic Turner sunsets it's renowned for, as well as the sand-covered bays and the atmosphere of the seaside. ▶



# Take inspiring seascape shots

Nikon pro Jayne Odell shows our apprentice  
how to take dramatic shots of the coast



# HOT SHOT #01



**EXPOSURE** 8 secs, f/10, ISO100

**LENS** Nikon AF-S DX 10-24mm f/3.5-4.5G ED

## PRO'S KILLER KIT #01 WELLINGTON BOOTS

**Jayne says...** Wellies – or, better still, waders – are crucial for the sort of images I shoot. Sometimes (in fact, more often than not!) the best angle isn't on dry land, but in among the rock pools and the waves. Taking off your shoes and socks is a real pain, not to mention painfully cold in winter. With wellies you can wade around checking out angles and compositions without having to worry about where you put your feet. It just speeds everything up, and allows you to concentrate 100 per cent on taking better photographs.



### ▲ Time and tide

Jayne knew from experience that this rock would only be surrounded by water at around high tide, so she made sure Sarah was all set up by 7am on the morning of the shoot, just as the tide was starting to go out. That way, she could nail the shot, then follow the tide out (see right).

## OUR APPRENTICE SAYS...



“ For our first shot of the day, taken well before sunrise, Sarah suggested focusing on a lone rock at Bamaluz Beach in St Ives, Cornwall, and using a symmetrical composition to isolate the rock and focus attention on it. She also encouraged me to position the horizon on the top third, and to get down low to fill the frame with the foreground rocks, as the sky was quite flat. An aperture of f/10 gave me a shutter speed of 8 secs at ISO100, which produced just the right amount of blur. Every time a big wave tumbled over the rocks Jayne would shout “Hit it!” and then “Did you get it?” It was really exhilarating! ”

EXPERT INSIGHT  
TIMING IS EVERYTHING

**Jayne says...** Getting the timing right is key to a shot like this – that and shooting constantly, to maximise your chances of getting a shot that really works. As Sarah soon discovered, the trick with wave-washed rocks is to wait until the wave is sucking back over the rocks, rather than when it's actually breaking. Even then, it's a case of trial and error; I can shoot a couple of hundred frames in a location like this and still only come away with one or two I'm happy with.



## Better out than in

Another advantage of shooting just after high tide, especially in rough conditions, is that it's slightly less perilous. With an incoming tide, you have to be very careful that you don't get caught out, but with an outgoing tide, you know the water is only ever going to be moving away from you. In either case, it still pays to keep one eye on the viewfinder and one eye on the waves!

## TECHNIQUE ASSESSMENT

## Was Sarah dialled in, or all at sea?

To see if Sarah was ready for a sea change in her photography, Jayne took a look at her settings...

## Open 'er up!

**Jayne says...** Sarah uses aperture-priority (A) mode, which is my preference too, and she rightly sets a small aperture of about f/16 for

landscapes, but when there's lots of sea spray around, I tend to open up to f/10 or f/11; at f/16 or f/22, depth of field is so good that any marks on a



## Open bracket...

**Jayne says...**

Sarah evaluates her exposures by checking her histogram display, but she's never bracketed her exposures. This isn't always easy with moving water, where timing is critical (see Expert Insight), but it can be useful in tricky lighting, as it means you can choose from a selection of exposures later, or even blend them in Photoshop



## Go live

**Jayne says...** Sarah uses autofocus, and sometimes she isn't sure if the edge or area she's focused on is actually sharp.

One way to be sure is to compose using Live View, as you can zoom in and check the focusing. Plus, shooting in Live View lifts the mirror up, so you don't get any mirror slap when the image is taken.



## PRO'S KIT BAG

Nikon D800, Nikon 14-24mm f/2.8, Nikon 24-70mm f/2.8, Nikon 70-200mm f/2.8, Nikon 1.4x TC-14E convertor, Nikon 20mm f/2.8, Nikon 35mm f/2, Nikon 50mm f/1.4, Gitzo Carbon 6X tripod, Arca Swiss Monoball Z1, Nikon MC-30 cable release, Lee Big Stopper (10-stop), Lee Little Stopper (six-stop), circular polariser, Lee .6ND hard grad & .9ND hard grad. ▶





# HOT SHOT #02

## OUR APPRENTICE SAYS...



“ For this shot we were able to make the most of the sunrise, which materialised despite the pretty unpromising forecast! Compared to our first shot the light was quite a bit

brighter, so Jayne recommended that I attach my six-stop neutral density (ND) filter to reduce the amount of light reaching the sensor, and so enable me to shoot a longer exposure at f/10. In the end this gave me a shutter speed of 0.8 sec, which provided the perfect balance between motion blur and detail. I also had to attach a two-stop ND grad to darken the sky slightly. On Jayne's advice, I shot wide, and low to the ground, to fill the frame with the beach, and to use the sweep of the receding waves to lead the eye towards the sunrise. ”



EXPOSURE 0.8 sec, f/10, ISO100  
LENS Nikon AF-S DX 10-24mm f/3.5-4.5G ED

### ▼ Leave no footprints

The old adage about 'taking only photos, leaving only footprints' definitely doesn't apply to seascapes, as Jayne explains:

"Leaving footprints in an area of sand that you're about to shoot is a cardinal sin, especially if there are other photographers with you! This is even more important if the tide is going out, as the incoming waves are unlikely to wash them away until it comes back in again, which could be hours later."



### PRO'S KILLER KIT #02 MICROFIBRE CLOTHS

Jayne says... I don't go anywhere without a set of three microfibre cloths for wiping spray and sand off filters. I use one to get the worst off, a second to get the filter properly dry, and a third to give it a final wipe down.



That way only the first one gets properly wet, while the last cloth stays reasonably dry. It also helps if they're all different colours, so I know which is which in the heat of the moment! I make sure I wash and dry my microfibre cloths after every shoot so that I don't run the risk of rubbing sand and grit from a previous photo shoot into my expensive filters.

### ▼ Turn your back

Jayne explained that when there's lots of spray to contend with, it's important to turn the camera away from the wind and spray, using your body to protect it, when changing lenses. If there's even a slight breeze spray is there, waiting to attach itself to your sensor! ▶





### OUR APPRENTICE SAYS...



“ With this image I combined what I'd learned with the first two to shoot a simple but effective composition. With my Nikon set to 10mm, Jayne encouraged me to get down really low, and 'right on top' of the foreground rock to make it the focal point; although it doesn't look like it, it was only a few feet away from the front of the lens. The shutter speed was slightly faster than for my previous shots, which has left some

#### ► Tilt your filter

If you're shooting a scene where the sky is brighter in one area than another (for example, clouds on one side and sun on the other), don't be afraid to tilt an ND grad so that it darkens the brightest area. This works best if the gradation between dark and clear is soft rather than hard, as the latter can result in an obvious line across the sky.

### EXPERT INSIGHT STAYING PUT

**Jayne says...** When I first started out shooting seascapes, I made the mistake of moving around all the time, and ended up missing everything. Now I stay in one place for as long as I need to, and really work it. This shoot was no exception: for Sarah's first three Shots of the Day, we didn't have to move more than about 50 feet, and by eight in the morning we already had three killer shots in the bag.

### PRO'S KILLER KIT #03 PLASTIC RAIN COVERS

**Jayne says...** You never know when the heavens are going to open on a shoot like this, so having something in your kit bag to protect your gear can be a godsend. Anything that keeps the worst of the rain off will do, even a small towel, but if you know it's going to be raining on and off all day, a plastic rain cover is just the ticket. It provides peace of mind, and allows you to keep an eye out for the next break in the clouds without having to worry about your camera dying on you.



#### ▼ Up and at 'em

"If you're ever in any doubt about whether to get up for a sunrise, it's almost always worth it," urges Jayne. "This is especially true when it comes to seascapes, as you can get dramatic shots in almost any weather, as long as you have a set of neutral density filters to hand."



# HOT SHOT #03



EXPOSURE 1/4 sec, f/10, ISO100  
LENS Nikon AF-S DX 10-24mm f/3.5-4.5G ED



# HOT SHOT #04

**EXPOSURE** 1/4 sec, f/11, ISO100  
**LENS** Nikon AF-S DX 10-24mm f/3.5-4.5G ED

## OUR APPRENTICE SAYS...



“ Here’s another shot in which timing was key. Jayne explained that waves rushing back down a beach look more impressive at slow shutter speeds than waves rushing up a beach. She also warned me to avoid capturing the harsh white line of an incoming wave – as this can take over the image – and to strive to fill the foreground with movement by wading in up to my ankles and waiting for the waves to rush back past me. I think I’ve managed this quite effectively here. I especially like the way the ‘V’ of the big thundercloud echoes the inverted ‘V’ of the white water on the left of the shot. ”

## PRO’S KILLER KIT #04 CLEANING SOLUTION

**Jayne says...** My filters and lenses take such a battering that wiping them with a cloth just isn’t enough. Not only does dedicated lens-cleaning solution help to remove every last bit of sand, sea spray and fingerprints, it also leaves a water-repellent sheen on the surface which helps to bead any drops of water that do land on it. Beads are easier to wipe off, and easier to clone out, than smeared raindrops.





### ▲ Think vertical

"When shooting any seascape, it's always worth checking if a vertical composition will work," Jayne adds. "With the Hot Shot pictured we went horizontal, but with most of the action and interest on the left, this could have worked equally well as a vertical shot."

## EXPERT INSIGHT TAKE STOCK

**Jayne says...** If I'm shooting on my own, which is the case most of the time, I'll spend the morning shooting before and after sunrise, and then, when the sun gets too high, I'll take the opportunity to retreat to wherever I'm staying to warm up, take stock and clean off all my gear (see below). It can be hard to think when the wind and the waves are rushing at you for hours on end, so taking a moment to pause and recharge will leave you raring to go when the sun does begin to drop back down towards the horizon.



### ◀ On the level

"With minimalist shots like this, it's worth making sure the horizon is perfectly level, as it will be obvious if it isn't," says Jayne. "You can correct it in Photoshop, but if you do this you lose some of the content, and this might lessen the impact of the shot."



### ◀ Dig in!

When you're shooting on a sandy beach, it's doubly important to really dig your tripod legs into the sand – especially if you're in ankle-deep water. ▶



### THE FINAL ASSESSMENT...

■ Despite a truly terrible weather forecast, Sarah really made the most of the windows of usable light throughout the day, largely thanks to Jayne's expert local knowledge – something which shouldn't be underestimated on a shoot like this. It all came together in her final Shot of the Day, which combines lovely warm light, great colour and perfect timing.



#### ▲ Now you see 'em...

Sometimes, footprints are hard to avoid. Just before Sarah took this shot, a dog scampered right across the bottom of the frame!

#### ▼ Now you don't!

Thankfully, though, one of the few advantages of an incoming tide is that unwanted footprints are soon washed away.

### OUR APPRENTICE SAYS...



“ I learnt so much from Jayne it's hard to know where to start! I'm now much more confident about how and where to focus, and when to begin my exposures to ensure the lines of the waves lead the eye into the frame. I'm also much braver in terms of where I'll put my tripod and camera, and I've discovered the importance of constantly cleaning lenses and filters! I was really pleased with how well everything came together for my Shot of the Day: I especially like the movement of the water, and how this and the focus on the rocks lead you into the image. The soft, subtle colours in the sky are just the icing on the cake. ”

### OUR PRO'S VERDICT



“ Sarah's Shot of the Day proves that you don't need to search out iconic locations to capture a beautiful seascape. The light was wonderfully soft, and as the sun went down the sky warmed up nicely for this capture just before dusk. The movement in the retreating water is just right too. As the day progressed, Sarah got to grips with fine-tuning her compositions, and, in terms of capturing the sea, when to release the shutter for long exposures. I know that Sarah enjoyed the day as much as I did, and I really look forward to following her progress. ” ■



# SHOT OF THE DAY!

EXPOSURE 0.6 sec, f/9, ISO100  
LENS Nikon AF-S DX 10-24mm f/3.5-4.5G ED





### THE APPRENTICE...

**NAME** Ross Lambert

**CAMERA** Nikon D7100

■ Ross works in the nuclear industry and his main photographic interest is travel, "from South Africa to Scotland and New York to Tokyo". He prefers to travel light and does not own a tripod, though he did borrow one for our Apprentice shoot around Manchester's Salford Quays. He's recently upgraded his Nikon D80 to a D7100, though he admits he's still learning about the buttons and functions. He owns two lenses: an all-purpose Nikon 18-200mm, and a 'thrifty fifty' 50mm f/1.8.



# Take stunning night cityscapes

Professional fine-art photographer Tim Gartside shows our apprentice how to take stunning shots of the city at night

## THE PRO...

**NAME** Tim Gartside  
**CAMERAS** Nikon D800

■ Tim is a professional fine-art photographer, author and trainer. His specialities include travel photography, landscapes, architecture and, more recently, wedding and portrait photography. You can find out more about Tim and his work at [www.timgartsidephotography.com](http://www.timgartsidephotography.com).



# HOT SHOT #01

## OUR APPRENTICE SAYS...



“ This picture of MediaCityUK over the water made a spectacular shot because of the reflections of the lights in the water. I wasn't used to using a tripod and long exposures, and I

had also only a month beforehand changed from a D80 to a D7100 but Tim was very patient and coached me through the 20 second exposure needed for this picture – and the effect on the water was amazing, blurring the ripples in the surface to produce this silky sheen. Tim showed me how to use my D7100's Mirror Up mode to minimise vibration, and the 10-20mm Sigma lens that *N-Photo* brought along was a revelation. I need to get a cable release, though – I found my ML-L3 infra-red remote annoying because it kept timing out between shots.”



### ▶ Seeing stars

We moved a few yards to shoot traffic trails. The 'starburst' effect around the street lights comes from a small (f/11) lens aperture, and older lenses are best for this – newer ones tend to have rounded diaphragm shapes which prevent it.

### ◀ Clean your lens!

A few specks of dust on your lens might not make much difference in daytime photography, but at night they're picked out mercilessly by bright light sources just outside the frame. You can see the effect here in Ross's picture of the Lowry Centre. Keep a microfibre cloth in your bag, and check your lenses regularly.







EXPOSURE 20 secs, f/11, ISO100  
LENS Sigma 10-20mm f/4-5.6

### EXPERT INSIGHT FOCUS WITH CARE

**Tim says...** You need to focus your night shots with special care. The camera's autofocus may not work so well after dark, particularly if there is no bright, clearly lit object under the focus point. You can use manual focus, but don't just turn the focus ring as far as it will go and assume that's infinity, because some cheaper consumer lenses focus past that point and you'll get a soft-looking image. Focusing by eye using the viewfinder is not very reliable, so use Live View instead. You can zoom in to show a magnified view and focus with great accuracy, though you do need relatively good light.



### TECHNIQUE ASSESSMENT

Ross had tried night photography before, but mostly shooting on the fly. Tim showed him how to take a systematic approach, with camera settings that will deliver more consistent results.

#### Pick Auto WB

**Tim says...** There are many different coloured light sources at night, so use Auto White Balance. The camera will often find a better balance than you could calculate manually. I checked that Ross was shooting in RAW, because he could always adjust the White Balance later on the computer if he had to.



#### Go manual

**Tim says...** I explained to Ross that working out the exposure at night is difficult because the camera's light meter will be confused by all the pinpoint light sources among large areas of inky blackness. It's much better to set the camera to manual and use trial and error, checking images on the LCD display as you take them and adjusting the exposure if necessary.



#### Small aperture

**Tim says...** Exposure settings can quickly get complicated, so I got Ross to standardise on a lens aperture of f/11 and then adjust the exposure time to get the exposure right for different subjects. F/11 is usually the sweet spot for lens quality, and it gives you plenty of depth of field too.



#### ▲ Time for reflection

Tim shows Ross the effect of long exposures on water at night. The reflections from the buildings don't look particularly striking to the naked eye, but the long exposure blurs the ripples in the water and turns the reflections into a beautiful wash of colour.



### THE PRO'S KIT BAG

Tim currently shoots with a Nikon D800, and packs a selection of favourite lenses to go with it. He's also got some very practical accessories to make those night-time shooting sessions simpler

■ Gitzo tripod ■ Nikon 70-200mm f/2.8 ■ Nikon 50mm f/1.8 ■ Super-wide-angle lens, e.g. Sigma 12-24mm ■ Remote release ■ Bubble spirit level for hotshoe ■ Flash ■ Powerful torch plus hand torch ■ Extra batteries ■ Hat and gloves! ▶



# HOT SHOT #02

## ► Shake-free shooting

Ross brought his own tripod but it lacked stability, so Tim showed Ross how to use a Manfrotto 190 tripod we brought with us. The secret to stability is to use the thickest leg sections first and not to use the centre column unless you've already extended the leg length to its maximum.



## ▲ Longer and wider

Ross brought his 18-200mm superzoom, which gave him plenty of opportunities for longer range shots, picking interesting details out of the surrounding buildings. We also gave him a Sigma 10-20mm super-wide-angle lens to try, and he was impressed by its powerful perspective effects and its practical value in confined spaces.





### OUR APPRENTICE SAYS...



“I liked this scene as soon as I saw it – it reminds

me of my continental travels. Tim showed me how to 'bracket' my exposures in manual mode by keeping to the same lens aperture but varying the exposure time. This 30-second exposure gives probably the best result, but I like the slightly darker 20-second exposure too. The light levels change so much that it's very difficult to predict the exposure that's going to give the best result, but working in manual mode makes it simple to experiment because you're not having to second-guess the camera's meter readings.”

10 secs



20 secs



30 secs



#### ▲ Have you got the right time?

Most Nikon D-SLRs have an exposure bracketing function, but Tim prefers to set the exposure times manually. Your first exposure may or may not be correct, but it will tell you whether you need to increase or reduce the exposure time, and by how much. It's simpler to do this yourself in manual mode than it is to set up the camera's auto exposure bracketing system. ▶

EXPOSURE 20 secs, f/11, ISO100  
LENS Nikon 18-200mm f/3.5-5.6

### THE PRO'S KILLER KIT #01 REMOTE CABLE

**Tim says...** Always carry a cable remote for night shots. They're quick, simple and effective to use, and there's no need to worry about batteries, line-of-sight or any of the other complications of wireless remotes. Nikon makes its own cable remotes, such as the MC-DC2 (to fit Ross's D7100) or the MC-30 (to fit pro D-SLRs like my D800). You don't have to buy a Nikon remote. This inexpensive Hähnel cable remote comes with connectors for all three remote sockets used by different Nikon D-SLRs.





### PRO KILLER KIT #02 SECRET OF MY POWER



**Tim says...** Always take spare batteries! You're out shooting for a long time and it's very frustrating to run out of battery power halfway through when you've made all that effort to lug a heavy tripod and camera gear to your chosen location. Remember that batteries run out a lot faster if you make heavy use of Live View, and their capacity is reduced in cold weather because the chemical reactions inside the battery are impaired and they don't operate at full efficiency.

### OUR APPRENTICE SAYS...



“The symmetry of this bridge made it a terrific subject, and we spent some time getting the camera in a perfectly central position. The camera wasn't quite level for my first few attempts, but Tim showed me how to use my D7100's Virtual Horizon to get the camera completely straight. There were a couple of ugly signs either side of the bridge, so we decided to crop the picture into a square shape to get rid of them.”

### ▼ Filling the frame

Great night shots don't just come from wide-angle vistas. Tim and Ross also looked for abstract details, patterns and shapes, and this is where a lens offering a range of focal lengths is useful, because it gives you more control over perspective and framing. Later in the evening the streets cleared, making it much easier to shoot unobstructed.



### ▶▶ Geometric shapes

Ross loves overlaid geometric lines and shapes, so relished photographing this building. He showed a good eye for composition and was soon experimenting with subjects he found for himself. His normal approach would be to grab shots quickly and then move on, but with Tim's help he started to see the benefits of a more considered approach. ▶



### EXPERT INSIGHT WHAT YOU SEE IS NOT WHAT YOU GET!

**Tim says...** Be careful when you're using the LCD display to judge exposure at night, because it makes pictures look brighter than they actually are, and this can affect your judgement – Ross had his display brightness set to maximum, which was far too high for the conditions. This is why exposure bracketing is a good idea, and it's also worth keeping all your bracketed shots until you get back to base, where you can look at them under normal lighting. The histogram display can be a good guide to exposure, but bear in mind that the camera's displaying a JPEG version of the picture that's been prepared in-camera. The actual RAW file will have more highlight and shadow detail.



### ▲ Straighten up

Tim shows Ross the importance of getting the camera level, and how to use his D7100's virtual horizon. It's important to keep the camera level in the fore and aft direction, too, because this prevents converging verticals.



# HOT SHOT #03

EXPOSURE 10 secs, f/11, ISO100  
LENS Sigma 10-20mm f/4-5.6



### THE FINAL ASSESSMENT...

■ Night photography can't be rushed, and after six hours among the bright lights of Salford Quays, everyone was ready for a hot drink and a recap in a local bar, where Tim and Ross pored over their pictures to choose their favourites.

### OUR APPRENTICE SAYS...



“ Having used Nikon SLRs since 2002, and a digital one since 2008, my night photography apprenticeship was the first time I have ever used a tripod, manual mode, tried exposure bracketing or mirror-up shots. From Japan to New York and South Africa to Scotland, all my photography over the years has been shooting from the hip. Hence, the night was genuinely a fantastically fun and relaxed learning experience that has given me more confidence to take fuller control of my photography. I'm really excited to give up my 'L plates' after the Apprentice and start learning to really drive my camera. Brilliant! ”

### OUR PRO'S VERDICT



“ The best night shots are usually to be found 15-20 minutes after sunset, because the sky will have rich, blue tones, even on an overcast night, so it will contrast really well with the warm tones of streetlamps and floodlit buildings. There may still be light in the sky for a while after this, but it depends the weather conditions, the time of year and the latitude – higher latitudes give you a little more leeway. It's the colour of the sky that makes this shot of the Lowry Centre my favourite from the whole session. The composition is really effective, too, thanks to the strong converging lines. Ross brought along his own 18-200mm lens, but used the Sigma 10-20mm super-wide-angle lens we brought along here, and the exaggerated perspectives this lens gives helps make the shot work. ”



EXPOSURE 10 secs, f/11, ISO100  
LENS Sigma 10-20mm f/4-5.6



Master your NIKON D-SLR camera

THE PHOTOGRAPHER'S APPRENTICE

SHOT  
OF THE  
DAY!







# Shoot beautiful wedding photos

Professional wedding photographer Stuart Cooper reveals how to shoot beautiful shots of the bride and groom on their big day





## THE PRO...

**NAME** Stuart Cooper  
**CAMERA** Nikon Df

■ Stuart runs a successful wedding and portrait photography business in Hampshire with his wife, Anna. He's also part of the training team at Aspire Photography Training ([www.aspirephotographytraining.co.uk](http://www.aspirephotographytraining.co.uk)), one of the country's best-known contemporary photography agencies, offering inspirational courses for enthusiasts and business-focused advice for pros. Stuart runs a two-day fine-art weddings workshop for Aspire, covering techniques from creating naturally-posed shots to developing a sound digital workflow.

[www.cooper-photography.co.uk](http://www.cooper-photography.co.uk)

## THE APPRENTICE...

**NAME** Laurence Sweeney  
**CAMERA** Nikon D7100

■ Banking industry veteran Laurence lives near the beaches of Northumberland and has had plenty of opportunity to practice seascapes and long exposures. However, he'd like to gain more experience in photographing people, especially weddings, family and other social situations. He considers his range of lenses – from a Sigma 10-20mm through to a Sigma 70-300mm – to be on the budget side, but intends to purchase some 'quality glass' in the near future. ▶



### OUR APPRENTICE SAYS...



“ Following a quick classroom session, where Stuart walked me through the plans he typically puts in place before a wedding shoot, such as the shot list crib sheet [see below], we headed

outside with our cameras. The first job of the day was to shoot a variety of close-ups, as Stuart was keen to show how details such as the cake, decorations, table settings and other features of the venue are an important part of the wedding day. He also suggested that this was the best time to get some attractive detail shots of the bride's shoes, flowers and accessories. ”

### EXPERT INSIGHT CRIB SHEET

**Stuart says...** One way to make sure you get every shot you need on the day is to create a 'crib sheet'. Use one side for a list of required shots and the other for the timings and running order of the day's events. Print out a small version and carry it around in an ID card-holder on a lanyard as this means you've always got it to hand to refer to and you'll never miss any important pictures.



### ▶ Eye level

Laurence got right up close to subjects for detail shots using his 35mm f/1.8 lens, selectively focusing on objects and using an aperture of f/2.2 to throw foreground and background detail out of focus.



### ▶ Creative composition

Laurence spotted the potential of the repeating lines created by the candles and the window in the background, and drew attention to these by tilting the shot.



# HOT SHOT #01

EXPOSURE 1/500 sec, f/2.2, ISO100  
LENS Nikon AF-S DX 35mm f/1.8G



## Essential details

Stuart guided Laurence through the 'big five' of wedding close-ups: rings, flowers, shoes, and details in the dress (front and back).

## TECHNIQUE ASSESSMENT

### Was Laurence ready to go?

Stuart talked Laurence through the key camera settings at the start of the day

### Exposure mode

**Stuart says...**

I prefer to shoot almost everything with the camera set to aperture-priority mode and matrix metering, and then use exposure compensation to make adjustments for light or dark backgrounds.



### Focusing mode

**Stuart says...**

Rather than use single-servo autofocus (AF-S), try switching to continuous-servo (AF-C) instead. By manually selecting an autofocus point in the viewfinder that corresponds with the person's eyes, the camera will then continuously adjust the focus as the subject (or you) move, keeping their eyes sharp.



### Lighting

**Stuart says...**

Worry about the light on the subject before you look at how the background and the rest of the location is being lit. Working in areas of shade will enable you to avoid 'hotspots' on a person's skin.



## THE PRO'S KIT BAG

Stuart's lens collection is typical of a working wedding photographer, with a 24-70mm f/2.8 as his main lens, along with a 70-200mm f/2.8 and two 50mm lenses – an f/1.4 and f/1.8. His choice of cameras is perhaps more surprising, with a Nikon Df being supplemented by a Nikon F6 film SLR,



plus a Contax 645 and an 80mm f/2 medium-format film outfit. Lighting comes in the shape of a single Nikon SB-910 Speedlight. ▶



### PRO'S KILLER KIT #01 NIKON 50mm f/1.8G

**Stuart says...** Use your feet to adjust the framing of a shot rather than rely on a zoom. A prime lens such as a standard 50mm lens on a full-frame FX-format camera (or a 35mm lens on a DX camera) will force you to do this. I shoot most of the images on my 50mm f/1.8 lens at f/2 to f/2.8 in order to get a shallow depth of field without it being too shallow.



### OUR APPRENTICE SAYS...



“Details done, we focused on shooting portraits of the most important person of the day: the bride. Stuart suggested that if this was a real wedding shoot we'd try to keep the photo sessions short and sweet during the day.

Rather than taking the couple away for an hour to take pictures, splitting the shot list into a few five- to ten-minute sessions is usually better, as the couple will want to enjoy the day rather than spend the whole time posing. One of Stuart's many useful tips was to set a ten-minute alarm on your phone and to start the timer going at the beginning of each session.



#### ◀ Helping hand

Stuart suggested that Laurence could hold his hand out in front of him to see where the light and shadows are falling before ushering the model into position.

#### ▼ Express yourself

Before you press the shutter release, check the expression on your subject's face. Be ready to say something funny or stupid or simply start laughing in order to make them smile too. ▶



### EXPERT INSIGHT ASPIRE BESPOKE TRAINING

Stuart is a Masterclass trainer for the Aspire Photography Training school ([www.aspirephotographytraining.co.uk](http://www.aspirephotographytraining.co.uk)). The contemporary photography training centre is based at the magnificent Dalton Hall in Cumbria, which formed the backdrop for our bridal shoot. Stuart is a graduate of Aspire's year-long Bespoke Programme himself, a course which taught him invaluable lessons about how to run the business side of a wedding and lifestyle photography studio.



#### ▲ Lighting matters

Stuart explained that he rarely uses reflectors for wedding shots as he finds them just too cumbersome. Instead, he always looks for areas of open shade, rather than full sun, especially during the middle of the day.



# HOT SHOT #02



EXPOSURE 1/500 sec, f/2.2, ISO100  
LENS Nikon AF-S DX 35mm f/1.8G



# HOT SHOT #03



EXPOSURE 1/320 sec, f/2.2, ISO100  
LENS Nikon AF-S DX 35mm f/1.8G





### ▲ Taking control

If poses look a bit stiff, it's important to take control and direct the bride and groom. Be confident with your direction, but try not to be bossy!

## OUR APPRENTICE SAYS...



“ When it came to posing the couple, Stuart's advice was to concentrate on the overall look and the expressions

before looking at the details of the poses, as that way you're much more likely to capture those 'magic moments' of the day. We were shooting on a sunny day and Stuart explained the difficulties of recording detail in both the bright wedding dress and the groom's darker suit in a single exposure. Because of this, we posed the couple in areas of open shade, rather than full sun, which really helped to reduce the contrast. ”



### ▲ Prop art

Introducing props such as chairs can help to relax the (probably stressed) couple and increase your chances of achieving more natural-looking results. Stuart warns against 'over-posing' the bride and groom, though, as this can lead to awkward, contrived shots.



### ▲ Softer background

Laurence borrowed Stuart's 70-200mm f/2.8G IF-ED VR lens for this shot. Zoomed to 150mm and used at its maximum aperture of f/2.8, it gave this super-smooth backdrop. ▶

## PRO'S KILLER KIT #02 FLASH BOUNCE CARD

**Stuart says...** I rarely use flash as the dominant light and I don't like fill-flash either (although I do use it to complement natural light). If I'm shooting indoors, I use my flash mounted on the hotshoe in TTL mode, but I use a Honl Speed Gobo strap-on bounce card to prevent the harsh, direct light from the flash hitting the subject.





### OUR APPRENTICE SAYS...



“ With the must-have ‘stock’ shots in the bag, we ended the day with some more adventurous images. Stuart normally shoots between 1200 and 1500 images per wedding, and the bulk of the 300 to 350 images that make the final cut are likely to be more conventional in approach. However, he includes a selection of unexpected options. Again, we stuck with natural light – bright overhead light – but Stuart advised me to concentrate on getting the exposure of the skin tones spot-on, before worrying about detail in the highlights and shadows, particularly when it comes to taking candid/spontaneous shots. ”

### PRO'S KILLER KIT #03 NIKON F6

**Stuart says...** I still shoot on film (Kodak Portra 400) for the look it gives images. It's actually the imperfection compared to a digital image that I prefer. To match the film and digital images, I have the film processed and scanned by a commercial lab (previously I was sending it to the US!), then I import both the scans and my Nikon Df images into Lightroom, and make adjustments to the Df files to match the film images as closely as possible.



#### ◀ Worm's-eye view

Stuart emphasised that what you leave out of an image is often more important than what you include – and a low shooting angle can help exclude everything but the sky.

#### ▼ Go wide

A 10-20mm zoom lens may be more suited to shooting a landscape than a wedding, but it brings useful variety to a wedding portfolio. ▶



### EXPERT INSIGHT TIGHT CROPS AND NEGATIVE SPACE

**Stuart says...** Don't be afraid to be bold with cropping and composition. Try to use negative space for a different look, as you don't always have to fill the frame for striking shots. Don't overdo it though: despite people being more 'open' to less conventional wedding shots now, it's still the more traditional images that family and friends of the bride and groom will buy.





# HOT SHOT #04



EXPOSURE 1/1250 sec, f/4.8, ISO100  
LENS Sigma 10-20mm f/4-5.6 EX DC HSM





### ▲ Gotta catch 'em all

You can't go back and reshoot a wedding, so it's important to keep checking your shots to make sure you've got them.

### ▼ Flower arranging

Brides can be tempted to hold their bouquets at their waists, but slightly higher or off to one side is often better.

## THE FINAL ASSESSMENT...

■ As with many of the successful images from the day, this relaxed shot (right) was taken with the couple in the open shade of the courtyard. The soft, even lighting means that there are no shadows across the bride's and groom's faces, and the camera has been able to squeeze the dynamic range of the scene – the difference in brightness between the lightest and darkest areas

## OUR APPRENTICE SAYS...



“ Thanks to Stuart's expertise and friendly guidance, I learnt so much during the day. I'm attending a number of weddings over the next couple of years and I feel the brief time I spent at Aspire's HQ with Stuart and the *N-Photo* team has certainly raised my skill level to the point where I'll be more confident in how I approach the big days. ”

## OUR PRO'S VERDICT



“ We squeezed lots into the day, but Laurence already had a good sense of composition and picked things up quickly, which was a big help. This particular image stands out thanks to the relaxed feel and the quality of the lighting. Sticking with larger apertures and natural light for the shoot allowed us to limit the technical demands and focus on the more important details of posing the bride and groom. ”





# SHOT OF THE DAY!



EXPOSURE 1/500 sec, f/2.2, ISO100  
LENS Nikon AF-S DX 35mm f/1.8G





### THE PRO...

**NAME** Sarah J Thomas  
**CAMERAS** Nikon D810

■ Sarah, who's from Penarth, near Cardiff, specialises in shooting natural portraits of children on location. She established her photography business in 2007, but has over 25 years' photography experience. As well as being a full-time child portrait photographer, Sarah also runs small group workshops to help aspiring or established photographers build on their skills. To find out more go to [www.sarahjthomas.com](http://www.sarahjthomas.com).





## THE APPRENTICE...

**NAME** Mandi McCabe

**CAMERAS** Nikon D3100

■ Charity admin manager Mandi McCabe invested in her Nikon D3100 15 months ago and has never looked back. Being a mother of three with three grandchildren, Mandi wanted to learn how to take better portraits of her family. Mandi's interest in photography began back in the 1970s at school when she would develop her own rolls of film. Although her interest in digital photography is relatively new, Mandi has a great grasp of the basics of photography. ▶

# Capture moving child portraits

Portrait professional Sarah J Thomas shows our apprentice how to take winning pictures of children at play



# HOT SHOT #01



EXPOSURE 1/60 sec, f/5.6, ISO500  
LENS Nikon AF-S 50mm f/1.8G



## Columns and posing

Here, Sarah positions Lily against a column. Not only is the light good from this point but it also means Lily won't move around too much from the spot. If you give a child something to lean against they're more likely to stay in position for longer (although this is not guaranteed!).

## At ease

Lily is very shy, and like most children nowadays she is well aware of what a camera is. It can take a little while to get them to relax and start acting and posing more naturally.





### EXPERT INSIGHT LIGHT AND POSITIONING

Sarah prefers to shoot using natural light as it enhances her organic style out on location. As she's talking and engaging with the child she'll be turning them around to see how the light is falling on their face. In this indoor location she places Lily next to the large window and chats to her to make her feel more comfortable and less conscious of her new surroundings.



### OUR APPRENTICE SAYS...



“ Our first location at Dyffryn Gardens ([www.nationaltrust.org.uk/dyffryn-gardens/](http://www.nationaltrust.org.uk/dyffryn-gardens/)) was inside its spectacular Victorian mansion. Large windows lined one side of the room so Sarah showed me how to use them as an effective natural light source. Our first model was three-year-old Lily, who was very shy initially. Sarah used props to grab Lily's attention and help her overcome her shyness. Lily's mum had packed a variety of dresses and Sarah asked Lily which one she wanted to wear, making Lily instantly feel more comfortable. ”

### PRO'S KILLER KIT #01 NIKON AF-S 24-70mm f/2.8G ED

**Sarah says...** A versatile zoom lens such as a 24-70mm is a worthwhile investment. When photographing kids outdoors they move around a lot so you need to be fast. Having the f/2.8 setting is essential, as not only does it produce that idyllic softened background effect, it also greatly helps in low light.



### TECHNIQUE ASSESSMENT

#### Work first, then play!

You can't hang around when photographing kids. Was Mandi's camera ready to start the shoot?

#### RAW vs JPEG

**Sarah says...**

Although Mandi was used to shooting in JPEG, by switching to RAW she'll get far more from the image file at the editing stage. This includes being able to correct the white balance setting and tweak the exposure. As you have to be fast with kids it pays to shoot in RAW to have that extra flexibility.



#### Manual control

**Sarah says...**

I like to shoot in Manual mode as that way I'm in complete control of my exposure. I also find Auto ISO a very useful feature as I can set my shutter speed and aperture, leaving my camera to balance the ISO (see feature, page 31). This is particularly useful when shooting in changing natural light, where I know what depth of field I want to achieve.



#### Focus options

**Sarah says...**

When it comes to focusing I switch between the single AF setting and Nikon's AF-C (Continuous Servo AF) feature. If there's lots of movement I'll opt for the latter. That way my camera's focus is tracking the children as they play. (For more on shooting modes, turn to page 58.)



### THE PRO'S KIT

Sarah has lots of treats and goodies hidden inside her kit bag! She uses a range of lenses including a Sigma 70-200 f/2.8, a Nikon 24-70mm f/2.8 and a couple of prime lenses. Sarah recently invested in a Nikon D810, and has a Nikon D700 as a back-up body. Also on hand to help her out are lots of sweets and toys, including a cuddly teddy bear! ▶



### OUR APPRENTICE SAYS...



“ After spending about half an hour inside with Lily we headed outdoors. With young children it helps to move around and change the scenery as they have short attention spans. This time we used the columns in a stone garden setting to our advantage. Lily has a classic look, which goes perfectly with this set-up. The sunlight was positioned behind Lily, catching the top of her hair. Although this can look effective, Lily has very light hair, and Sarah warned me to check I wasn't blowing the highlights in my image. We moved Lily back a few inches into the shade, and I managed to capture this moment of her looking off into the distance. ”



#### ▲ Get on their level

Sarah advises Mandi to get down low so she's shooting at eye level, as this creates a more engaging image. Child photographers spend most of their time on the floor!

### PRO'S KILLER KIT #02 SWEETS!

**Sarah says...** Kids love sweets and they'll respond much better to you if you can bribe them! At the beginning of the shoot I tell them I have a special treat, and if they behave they'll get a reward. Of course, I always check with parents first if this is okay.



#### ▶ Shoot in the shade

Although natural light is the easiest to work with you still have to be aware of a few things. If you place a child in direct sunlight, they'll squint, ruining the shot. Sarah suggests to Mandi to find large areas of shade to work with where the light is much softer. 📸



# HOT SHOT #02







EXPOSURE 1/160 sec, f/4, ISO400  
+ LENS Nikon AF-S 24-70mm f/2.8G ED

## PRO'S KILLER KIT #03 SIGMA 70-200mm f/2.8 EX DG MACRO HSM

**Sarah says...** A long lens such as a 70-200mm is great for portraits. You can throw the background out of focus and the long focal length is excellent for flattering facial features. When using a long lens you need to make sure your shutter speed is fast enough to compensate for the focal length. For example, at 200mm you want to shoot with a shutter speed of at least 1/250 sec.





# HOT SHOT #03



## ► Warm it up

Give your images a magical glow in Photoshop – see the walkthrough opposite for how to do this.



## PRO'S KILLER KIT #04 WOODEN BOX

**Sarah says...** A simple wooden box can make a massive difference to the end result. It also means you can position your model where you want them to sit. A child like Archie, who is two years old, is going to struggle with direction. Using the box, we can be sure he'll sit still in the spot where the light and composition are good.







### ▲ Lower the tone

Wee and poo jokes always go down very well with small children. It's a quick and easy way to get a smile, but Sarah recommends that you check with the parents first if toilet humour is acceptable!

### ▼ Use a rug

Give yourself a bit of comfort and save your clothes from getting dirty by investing in a rug. By coming down low you'll be able to capture much stronger compositions.



EXPOSURE 1/640 sec, f/2.8, ISO800  
LENS Nikon AF-S 24-70mm f/2.8G ED



### ◀ Against the clock

When photographing young children there is only so long they will last on the shoot so you have to work fast. For a two- or three-year-old you'll be stretched to get them to pose much past an hour. They are also easily distracted by many things, so it's vital that you are prepared, with props that will be of interest to them. ▶

## OUR APPRENTICE SAYS...



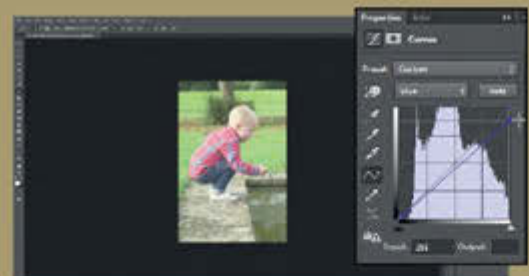
“ Like Lily, two-year-old Archie was shy to begin and wasn't that keen on smiling! Although we did manage to get Archie to smile eventually, Sarah showed me that you don't have to have them grinning to get a good shot. Pouting faces and big lower lips can also reveal the child's personality! This vineyard archway created a natural frame for Archie. ”

## EXPERT INSIGHT WARMING UP



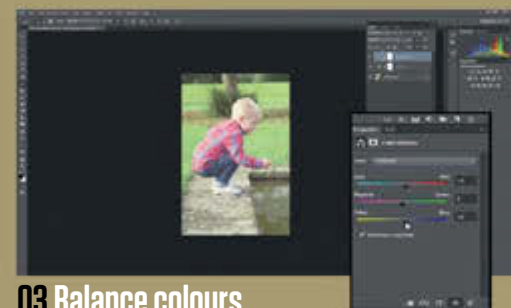
### 01 Raw adjustment

Open your shot in Camera Raw. You can adjust the Temperature slider to warm or cool your image. We want to warm it up. Make any necessary adjustments to the exposure sliders. Press Open Image.



### 02 Soften contrast, add warmth

In the main editor add a Curves adjustment layer. Push the bottom-left corner of the graph up to the quarter mark. Under the RGB tab change the setting to Blue and pull the right-hand corner down a little.



### 03 Balance colours

Add a Colour Balance adjustment layer. From the drop-down box select Shadows. Pull the Red and Blue sliders in to cool the shadows. Click on Highlights and turn the Yellow channel up to warm the image.



### OUR APPRENTICE SAYS...



“ Our last model of the day was Lily-Anne. Lily-Anne was very excitable when we started the shoot and kept moving towards me! This meant I had to be fast in getting my shot before she moved again. We tried a few different poses with her looking into the camera and away. The shot that worked for me was when she stared straight down the lens. It was vitally important that I kept her eyes sharp to have the maximum effect. ”

### EXPERT INSIGHT SHOOTING SHALLOW

Sarah prefers shooting with a very wide aperture setting to soften the background and give her images that dreamy appeal. She finds primes particularly good for this, as they're usually able to open wider than a zoom lens. But shooting at such a wide aperture setting means Sarah has to be spot-on with her focusing. Eyes are the most important element to keep sharp, while everything else can soften and blur.



### ◀ Backlighting beauty

When the light begins to drop, it's the perfect time to shoot with the light behind or to the side of your subject. Backlighting creates a halo of light around your subject's head, highlighting the edges of the hair. Although the lens flare captured in the image below is technically a flaw, in these circumstances it produces a wonderfully atmospheric photo.



### PRO'S KILLER KIT #05 NIKON AF-S 50mm f/1.4G

**Sarah says...** I have couple of prime lenses in my kit bag, but my nifty fifty gets used the most. On a full-frame camera a 50mm lens best replicates what the human eye sees. At the widest aperture setting of f/1.4 you have to be spot-on with your focusing. This is best to use when shooting head-and-shoulder portraits.



### ◀ Accessories, hats and scarves

Introducing props such as a hat or scarf can enhance the shot. Just make sure the eyes are not in shadow if the hat has a peak or brim. A reflector can come in handy to bounce a little light back into the face if this is the case.

### ▶ Leading lines

There are lots of compositional tools in everyday settings that work well for taking portraits. Brick walls, tiles and wooden cladding (as in our Hot Shot), to name just a few, all work well for this type of pose. The lines lead into the face, which should be positioned around two-thirds into the frame. ▶





# HOT SHOT #04

EXPOSURE 1/800 sec, f/2.8, ISO800  
LENS Nikon AF-S 50mm f/1.8G



### THE FINAL ASSESSMENT...

■ For the final shot of the day Sarah got Lily-Anne to spin around on the spot. With the soft sunlight positioned behind her, they managed to capture this beautiful atmospheric glow. Mandi adjusted her focus setting to AF-C in order to track Lily-Anne as she spun, and set the camera to fire in continuous burst mode for a sequence of images.

### OUR APPRENTICE SAYS...



“ Thanks to Sarah's advice I managed to come away with some great shots. I learnt so much, from understanding how to interact with the children to gaining some technical expertise. I can now put into practice what I learnt on my grandchildren. I particularly like this final image of Lily-Anne. Due to her outgoing personality this final set-up shows her energy and sense of fun. ”

### OUR PRO'S VERDICT



“ Mandi has a natural eye for composition and a friendly manner with the children. By working on her technical knowledge she will progress greatly. For this final image we had soft light working in our favour, and Mandi managed to capture this wonderful sequence, putting all we'd covered into practice. ” ■





# SHOT OF THE DAY!



EXIF: 1/3200 sec, f/2.8, ISO400  
LENS: Nikon AF-S 24-70mm f/2.8G ED



### THE APPRENTICE...

**NAME** Les Thomas  
**CAMERA** Nikon D800

■ Les got the photography bug in his 20s, after visiting the Norfolk Broads with his first FED film camera. Since moving to Lancashire from Cornwall he's had more time for his photography and his family (whose latest member, granddaughter Abigail, was born while Les was photographing puffins with *N-Photo*). He loves to capture the birds that flock to his back garden and wrote to us to ask for tutelage taking shots of something more challenging. So we invited him along to the Farne Islands with wildlife pro Chris Gomersall to meet the locals...

### THE PRO...

**NAME** Chris Gomersall  
**CAMERA** Nikon D4s

■ Chris is one of the UK's best-known wildlife photographers, with a 30-year track record working as everything from a nature reserve warden to the in-house photographer for the Royal Society for the Protection of Birds (RSPB). He's now a freelance pro photographing wildlife on commissions from the WWF, *BBC Wildlife* and others. He's been using Nikon gear since the beginning and now runs Nikon's wildlife training schools as well as his own workshops all over the world, but he's still got a soft spot for Britain's wild island birds. 📸



A large colony of seabirds, likely gulls or terns, is perched on a rugged, reddish-brown rocky cliff. The birds are densely packed along the top edge of the cliff, with some individuals visible on the face of the rock. The cliff overlooks a vast, blue ocean under a cloudy sky. In the foreground, a person's foot wearing a brown boot is visible on a mossy rock.

# Take action-packed bird photographs

Bird specialist Chris Gomersall reveals how to shoot  
amazing pictures of birds in the wild



### THE PRO'S KILLER KIT #01 PLANT POT LENS HOOD

**Chris says...** I had a small accident with my Nikon lens hood! I'm waiting for a replacement part at the moment, but I really needed a temporary stand-in for this trip so I decided to have a go at fashioning a lens hood from a black plant pot. You can pick them up for a pound/dollar at your local garden centre. I simply cut the bottom off and slotted it on the end of the lens, and it works really well at reducing lens flare. I'm quite tempted to keep it...



### OUR APPRENTICE SAYS...



“ We got stuck straight into flight shots when we arrived on Staple Island, the first location of the day. The light was good and the puffins were zipping about over our heads with mouths full of sand eels. I wasn't sure how to set up my D800 to freeze the birds mid-flight but Chris talked me through which settings to use and explained how to prefocus before each attempt. The more shots we took, the more decent images I captured of each flight, but I really like this one – the puffin's head is sharp but there's a hint of movement in the wings and there's plenty of space for him to fly into, with the out-of-focus cliffs and other bird in the background hinting at his environment. ”

#### ▶ Good vibrations

Chris' top tip is to switch your lens' Vibration Reduction (VR) off when using a shutter speed of over 1/500 sec. This may sound counterintuitive, but at that speed your shutter will be fast enough to eradicate any camera shake and you'll speed up the autofocus ability.



#### ◀ Get the blinkies

Les doesn't usually check his histogram. However, Chris suggested he enable both the RGB histogram and Highlights warning in his D800's playback menu so that he could quickly check if his exposure settings were working well.

EXPOSURE 1/1000 sec, f/6.3, ISO800

LENS Nikon AF 80-400mm f/4.5-5.6D ED VR

# HOT SHOT #01







### Lenses to go

Chris and Les used telephoto zoom lenses on this trip to the Farne islands. It's essential if you want to get close-up shots of wild birds without frightening them, especially at a time of year when they're nesting. A good zoom range meant Les was able to take a range of shots, from portraits to ones of birds in flight or set in their wider environments. ▶

### EXPERT INSIGHT FOCUS!

A beautiful portrait shot and a dynamic flight shot are two very different things, so Chris gave Les a mini masterclass on flight shots before they started shooting. Les switched his shooting mode to Ch or Continuous High mode, giving him a frame rate of 4 shots a second – and more chance to capture the perfect pose. He also switched to AF-C mode and used back-button focusing, a sports photography trick which means that the camera is continually refocusing. Chris and Les watched the puffins overhead until they'd



spotted a regular flight path and then got into position. Chris recommends prefocusing on the ground or an object that's a similar distance away before each bird turns up to ensure sharp shots.



### THE PRO'S KILLER KIT #02 BINOCULARS

**Chris says...** A wildlife photography essential. Mine are Nikon's Porro prism 10x42 SE model.

Other pro photographers seem to have big, heavy binoculars hanging round their necks these days, but I prefer something lightweight, and these don't compromise on quality. I use them to spot wildlife from the boat before landing, or to check if there are dolphins near the coast. Nikon doesn't make the 10x42 SE any more, but you can still find them for sale on eBay, or the RSPB has a great pair of beginner-friendly 10x42 glasses for £135/230.



# HOT SHOT #02



### OUR APPRENTICE SAYS...



“ We stepped away from puffins for a while to shoot some of the other wild birds nesting on Staple Island. This shag was sitting on its nest and protecting its

newborn chicks, so it was quite defensive when we got close. I waited for it to open its mouth wide and used a shallow depth of field to isolate it against the cliffs, focusing on the glint in its green eye, which really pops against the yellow beak. I like how much detail there is in the shag's feathered chest, and Chris' tips really helped me get the right exposure. ”

#### ▶ Tri or don't tri?

Les wasn't sure when to use his tripod and when to ditch it. Chris uses his tripod and gimbal head for flight shots and when taking close-ups of birds in a fairly fixed position, switching to handheld when he needs to be more responsive and quick to react, such as when fast-moving puffins are popping in and out of their burrows.



#### ▲ Look sharp

In both bird portraits and flight shots, the right focus is key. Keep the bird's eye sharp for a well-focused portrait. Chris also makes sure that his puffins' iconic colourful bills are in focus too, especially if they've got a mouthful of sand eels.





**EXPOSURE** 1/125 sec, f/5.6, ISO800  
**LENS** Nikon AF 80-400mm f/4.5-5.6D ED VR

### THE PRO'S KILLER KIT #03 SHOWER CAP

**Chris says...** Using a shower cap to protect your Nikon from the rain is an old bit of wildlife photography folklore that actually works. I always steal them from hotels and keep a few in my kit bag for when the weather changes. If it starts to pour down when you're on a shoot you can easily slide the shower cap over the back of the camera, and it'll work in conjunction with your lens cover to keep everything dry. You can still use the buttons on the back of the camera through the thin plastic, and you can even look through the viewfinder at a



push. There are more expensive, purpose-made camera covers available in shops, but I don't mind improvising with a freebie.

### TECHNIQUE ASSESSMENT

Before they got ready to find some puffins to pose for them, Chris checked that Les was all set up and ready to take some great bird portraits.

#### Camera setup

**Chris says:** We tweaked a few of Les' basic settings to get better results instantly. First he changed to shooting in 14-bit RAW, which takes up more space on your memory card but gives a little extra tonal and colour range. Les had his picture control set to Vivid. This is usually used for things like fashion shoots, so he switch back to neutral, as you can always increase colours in post-production.



#### Exposure compensation

**Chris says:** Birds with black-and-white plumage can be an exposure nightmare. Check the histogram and make sure you're keeping detail in the pale feathers—when shooting in sunshine you might need to under-expose by up to two stops. Under overcast skies you can over-expose by 0.3-0.7 stops.



#### Dynamic area autofocus

**Chris says:** Birds aren't as patient as human models, and may still move around a bit when you're framing up a portrait. Dynamic area autofocus is a good choice for keeping your chosen puffin in focus if it's shuffling about or moving erratically. On Les's D800 you can select different numbers of autofocus points, such as D9 or D21, for your camera to work with.



### THE PRO'S KIT

Chris totes around his D4s with a D300 as a backup body. His go-to lens is the Nikon 200-400mm f/4 II super zoom lens and he's also

got the following things in his kit bag:

- Nikon AF-S 70-200mm f/2.8 ED VR II ■ Nikon AF-S 105mm f/2.8 macro
- Nikon AF-S 14-24mm f/2.8G ED
- Nikon TC-14E II 1.4x teleconverter





EXPOSURE 1/200 sec, f/10, ISO200  
LENS Nikon AF 80-400mm f/4.5-5.6D ED VR

## OUR APPRENTICE SAYS...



“ After spending the morning on Staple Island we caught the boat to Inner Farne. We'd seen puffins in flight and scurrying in and out of their burrows on Staple Island but we had more luck with portrait shots here, as there was a big flock of puffins hanging out on a cliffside. Chris told me these were off-duty birds loafing about, and they were much easier to photograph as they weren't rushing about looking after their eggs. I waited for one with a mouthful of sand eels to perch in a clear space on the boulders, and got down low to frame him nicely against the rocks and the grass. ”

### ▶ Group shot

Don't just concentrate on single puffins – shots of groups and pairs look great too, and showing how the birds interact in the environment adds a nice reportage feel to your shots. Switch to a narrower aperture, such as f/11, to get pairs or a whole line of birds in focus.





# HOT SHOT #03

Master your NIKON D-SLR camera

THE PHOTOGRAPHER'S APPRENTICE

## THE PRO'S KILLER KIT #04 WATERPROOF LENS COVER

**Chris says...** This camouflage sleeve is from Wildlife Watching Supplies, which stocks a range of designs for different Nikon-fit lenses for around £35/\$60 each. It's waterproof and easy to pop over your glass in a sudden downpour. You could always make your own out of waterproof material, but I like these because they have Velcro slits that allow you to fix your lens to a tripod easily, and they're adjustable to fit snugly around your camera body.



### ► Puffin place

Include elements of the environment in the shot – as puffins live in burrows, a classic shot is to show them popping out of grass or flowers. Chris suggests framing up a shot and then waiting for a puffin to turn up. ►

“ Don't just concentrate on single puffins – shots of groups and pairs look great too ”





### OUR APPRENTICE SAYS...



“ This shot of an Arctic Tern was taken right at the end of the day. I felt by then that I was getting comfortable taking portrait shots, and I was opting for an aperture of around  $f/5.6$ , a shutter speed of roughly  $1/400$  sec and tweaking the ISO slightly for each different location. We'd packed up our kit and were walking back to the boat when I saw this grumpy tern squawking angrily, so I got my Nikon back out for a final snap. I focused on his bright eyes and Chris suggested I crop the shot as a portrait, which really improved the final result. ”

### EXPERT INSIGHT KNOW YOUR LOCATION

The Farne Islands lie off the coast of Northumberland and are owned and looked after by the National Trust. Chris has been coming here in search of puffins, guillemots and dolphins for years. A few boat companies operate from Seahouses, the village on the mainland – we took Billy Shiel's full day trip ([www.farne-islands.com](http://www.farne-islands.com)) to travel to Staple Island and Inner Farne, the two islands on which visitors are allowed. A day's boat trip costs £36 per person, and there's also a National Trust charge of £6.80 on each island in high season. The islands are open to visitors from 1 April-31 October. Other locations to find puffins in the summer include Skomer in Wales and Fair Isle in Scotland.



### ◀ All aboard

You can't just walk around anywhere you like on the Farne Islands, as the ground is full of puffin burrows, which could easily collapse if stepped on. Instead, there's a grid of boardwalks all over the island. It makes it a little harder to get up close to the birds but it does give you somewhere convenient to set up your camera and wait.



### THE PRO'S KILLER KIT #05 WIMBERLEY MARK II GIMBAL HEAD

Chris says... The Wimberley Head is a specialised tripod head for telephoto lenses, with a gimbal-type design which allows you to rotate your lens. This is the original, although there are lots of copies about. It's not cheap at £520/\$595, but it's an essential for wildlife pros, as it's super-smooth moving, so you can pan, balance the camera or lock it in place. Perfect for stills and action shots, it makes even hefty lenses feel weightless.



### ◀ Angry Birds: the real-life experience!

It's best to have a hat on when you visit Inner Farne – the Arctic Terns are aggressive in breeding season and will try their best to peck you on the head. ▶



# HOT SHOT #04



EXPOSURE 1/400 sec, f/5.6, ISO640  
LENS Nikon AF 80-400mm f/4.5-5.6D ED VR



### THE FINAL ASSESSMENT...

■ At the end of our day's shooting we got the boat back to the mainland again. While everyone enjoyed a much-needed cup of tea, Chris looked through all Les' photos and chose his favourites. There was an obvious candidate for Shot of the Day – this lovely image, which really captures the cheeky personality of these popular little seabirds.

### OUR APPRENTICE SAYS...



“ We'd taken lots of classic puffin shots all day and I was really pleased with the ones I'd got, but I was still hunting for a shot that really showed off the character of these charismatic little birds – they're so much fun to watch! This one wandered into my frame in the early afternoon and posed for a while before suddenly turning head-on and puffing out his chest for us. I got down really low to frame him with some blurred sea campion in the foreground, which leads you into the shot. Diffused light through some cloud that had gathered helped with my exposure, and there's a lot of detail in the plumage on his wings. ”

### OUR PRO'S VERDICT



“ This photograph really captured my attention, as there's great symmetry to it, thanks to the way the puffin is standing. It's a little different to your standard posed wildlife shot, and I like the burrowing marks all over the puffin's chest – these traces of soil tell you a little more of a story about the bird's behaviour, so it's a great shot from a wildlife fan's point of view, too. The wide aperture Les opted for helps the puffin stand out in his environment, and he's perfectly in focus with a really nice clarity to the detail on his wings and face. Great job, Les! ”

# SHOT OF THE DAY!



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THE PHOTOGRAPHER'S APPRENTICE



EXPOSURE 1/400 sec, f/5.6, ISO400  
LENS Nikon AF 80-400mm f/4.5-5.6D ED VR



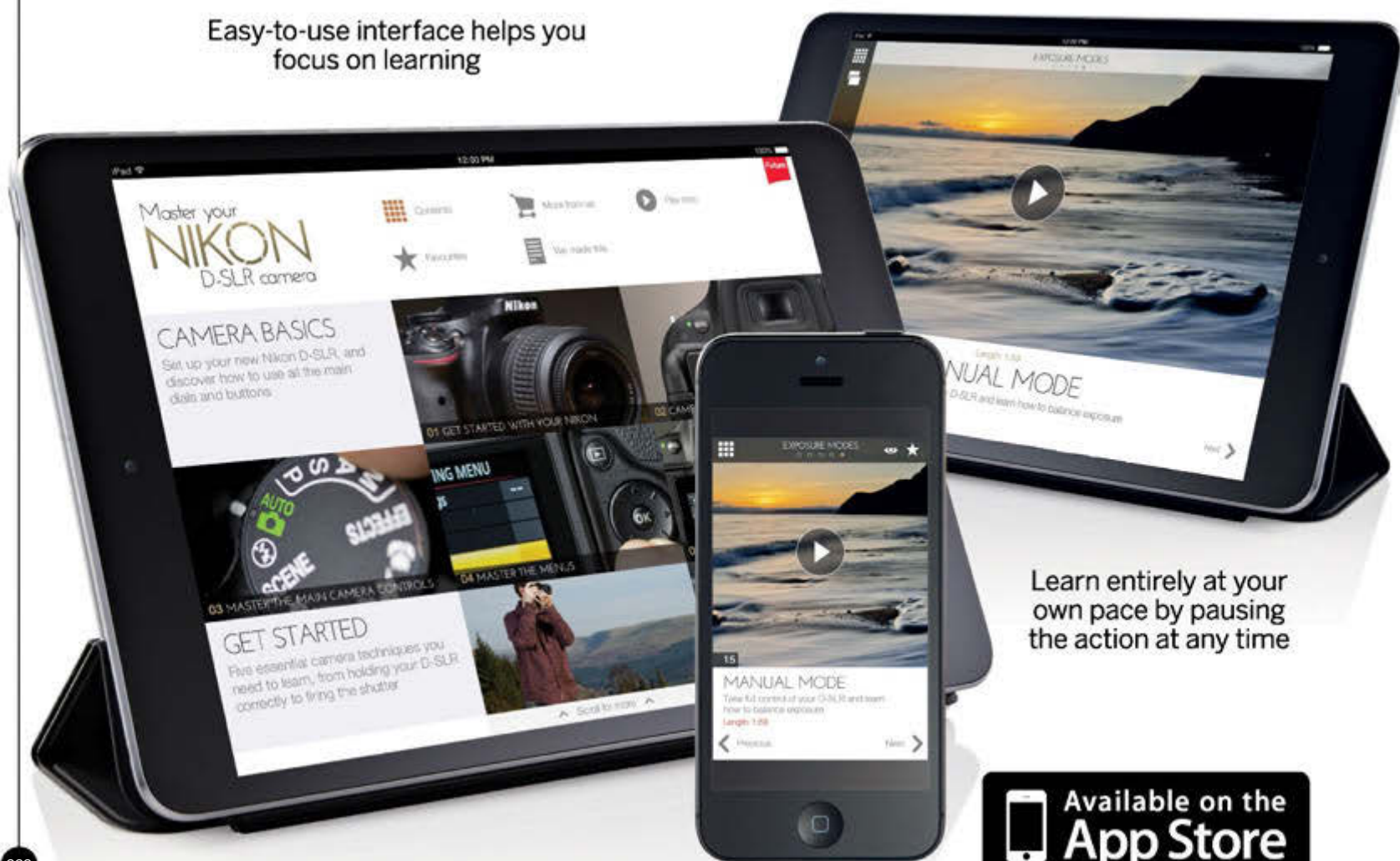
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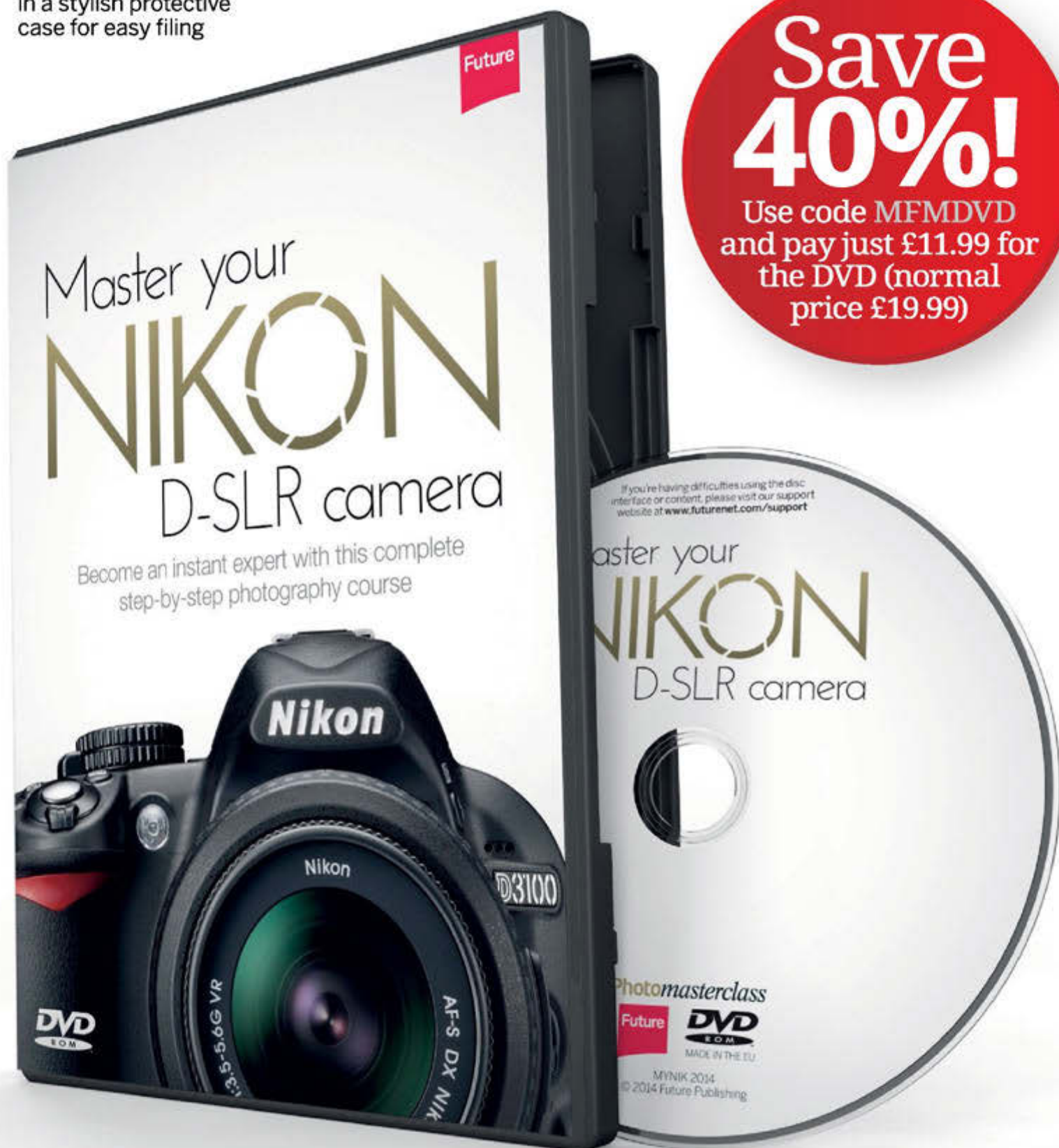
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